

Table 6-2

Probe No.	Base Sequence
31	aca cag act Tac cga gag a ( SEQ ID No :302)
32	g gag ggc aCg tgc gtg ( SEQ ID No :303)
33	ggg aag gaG acg ctg ga ( SEQ ID No :304)
34	g aag gag aCg ctg gag c ( SEQ ID No :305)
35	g gag ggc cTg tgc gtg ( SEQ ID No :306)
36	c gtg gag tCg ctc cgc ( SEQ ID No :307)
37	c ggg gag cTc cgc ttc ( SEQ ID No :308)
38	c gcc gcg Aac acg gcg ( SEQ ID No :309)
39	tg cgc ggc Gac tac aac ( SEQ ID No :310)
40	g gag ggc CTg tgc gtg ( SEQ ID No :311)
41	g gcc cgt gTg gcg gag ( SEQ ID No :312)
42	g gag cag cTg aga gcc t ( SEQ ID No :313)
43	ca cag atc tCc aag acc aa ( SEQ ID No :314)
44	aca cag act Tac cga gag g ( SEQ ID No :315)
45	c cga gag Gac ctg cgg ( SEQ ID No :316)
46	cc ctg ctc Cgc tac tac ( SEQ ID No :317)
47	tat gac cag Gac gcc tac ( SEQ ID No :318)
48	agg tat ttc Gac acc gcc ( SEQ ID No :319)
49	c acc gcc Atg tcc cgg ( SEQ ID No :320)
50	gag ccg cCg gcg ccg ( SEQ ID No :321)
51	g gag ggc Acg tgc gtg ( SEQ ID No :322)
52	g agg aag agC tca ggt gg ( SEQ ID No :323)
53	cc gcg ctc Cgc tac tac ( SEQ ID No :324)
54	c ctg cgg aTc gcg ctc ( SEQ ID No :325)
55	g cgg atc gCg ctc cgc ( SEQ ID No :326)
56	.tc gcg ctc Cgc tac tac ( SEQ ID No :327)
57	g aag gac aCg ctg gag c ( SEQ ID No :328)
58	ac aca cag aCc ttc aag ac ( SEQ ID No :329)
59	g acg atg taT ggc tgc ga ( SEQ ID No :330)
60	gg gac cgg Gac aca cag ( SEQ ID No :331)
61	ac cac cag Gac gcc tac ( SEQ ID No :332)

Table 6-3

Probe No.	Base Sequence
62	aac aca cag Gct gac cga (SEQ ID No:333)
63	gcc ctg ggC ttc tac cc (SEQ ID No:334)
64	c acc cag cTc aag tgg g (SEQ ID No:335)
65	ct tgg cag aCg atg tat gg (SEQ ID No:336)
66	t aac cag tTA gcc tac gac (SEQ ID No:337)
67	c tgc gac Ctg ggg ccg (SEQ ID No:338)
68	a tct tcc caA tcc acc gtc (SEQ ID No:339)
69	g aga gcc tGc ctg gag g (SEQ ID No:340)
70	acc ctc cag Tgg atg tat g (SEQ ID No:341)
71	a gca gga gaC aga acc ttc (SEQ ID No:342)
72	a tgg gag ccA tct tcc ca (SEQ ID No:343)
73	tc tac acc Gcc gtg tcc (SEQ ID No:344)
74	tcc atg agg Cat ttc tac ac (SEQ ID No:345)
75	g ggg ccg gaA tat tgg ga (SEQ ID No:346)
76	tc cgc aga C ac ctg gag (SEQ ID No:347)
77	g acg ctg Cag cgc gcg (SEQ ID No:348)
78	ctc tcg ggA gcc ctg g (SEQ ID No:349)
79	cgg gcg ccA tgg ata ga (SEQ ID No:350)
80	g gac cgg gaG aca cag at (SEQ ID No:351)
81	cg gag cag Tgg aga gcc (SEQ ID No:352)
82	t cag gac acC gag ctt gt (SEQ ID No:353)
83	c gac ggc aaA gat tac atc (SEQ ID No:354)
84	tgg acc gcG gcg gac a (SEQ ID No:355)
85	c gcc ctg aaI gag gac ct (SEQ ID No:356)
86	cag ttc gtg Cgg ttc gac (SEQ ID No:357)
87	gtg gtc gct Act gtg atg (SEQ ID No:358)
88	ag agg atg tIt ggc tgc g (SEQ ID No:359)
89	ca cag atc tGc aag acc aa (SEQ ID No:360)
90	agg atg gcI ccc cgg g (SEQ ID No:361)
91	tgc gtg gaC ggg ctc c (SEQ ID No:362)
92	gc tcc cac tTc atg agg t (SEQ ID No:363)

Table 6-4

Probe No.	Base Sequence
93	gcc tcc gcG cag act ta ( SEQ ID No :364)
94	tg gtg gtg cTt tct gga g ( SEQ ID No :365)
95	ac cac ccc Gtc tct gac ( SEQ ID No :366)
96	ac cgg gag aTā cag atc tc ( SEQ ID No :367)
97	g agg atg gCg ccc cgg ( SEQ ID No :368)
98	g agg atg tCt ggc tgc g ( SEQ ID No :369)
99	c gcg gac aAg gcg gct ( SEQ ID No :370)
100	cc ctc cag aCg atg tac g ( SEQ ID No :371)
101	c ctc cag acG atg tac gg ( SEQ ID No :372)
102	aac ctg cgC acc gcg c ( SEQ ID No :373)
103	ag gac ctg Agc tcc tgg ( SEQ ID No :374)
104	gc ttc atc Gca gtg ggc ( SEQ ID No :375)
105	atg gcg ccC cgg gcg ( SEQ ID No :376)
106	c gac gcc Acg agt ccg ( SEQ ID No :377)
107	cag ctg aga Acc tac ctg ( SEQ ID No :378)
108	cc aac aca cGg act tac c ( SEQ ID No :379)
109	ggg aAg gaG acg ctg ca ( SEQ ID No :380)
110	ac gac acg cTg ttc gtg a ( SEQ ID No :381)
111	ct tac cga gTg aac ctg c ( SEQ ID No :382)
112	c cga gtg aAc ctg cgg a ( SEQ ID No :383)
113	at aac cag tTc gcc tac ga ( SEQ ID No :384)
114	gtg agg ttc Aac agc gac ( SEQ ID No :385)
115	c acc cag cAc aag tgg g ( SEQ ID No :386)
116	cg gag cag cTg aga acc t ( SEQ ID No :387)
117	agg tat ttc Cac acc tcc g ( SEQ ID No :388)
118	a aag aca caT gtg acc cac ( SEQ ID No :389)
119	atc tcc aag aTc aac aca ca ( SEQ ID No :390)
120	g gcc cgt Cag gcg gag ( SEQ ID No :391)
121	g ata gag caA gag ggg cc ( SEQ ID No :392)
122	cag act tac Aga gag agc c ( SEQ ID No :393)
123	g aat atg taT ggc tgc gac ( SEQ ID No :394)

Table 6-5

Probe No.	Base Sequence
124	cgc ttc att Gca gtg ggc ( SEQ ID No :395)
125	gcc ctg aaG gag gac ct ( SEQ ID No :396)
126	ct tac cga gTg agc ctg c ( SEQ ID No :397)
127	g agg atg tGc ggc tgc g ( SEQ ID No :398)
128	g ata gag caA gag ggg cc ( SEQ ID No :399)
129	ca cag atc tGc aag gcc a ( SEQ ID No :400)
130	c ctg cgc aCc gcg ctc ( SEQ ID No :401)
131	cgc acc gCg ctc cgc ( SEQ ID No :402)
132	c ctc cag aaT atg tat ggc ( SEQ ID No :403)
133	gg ccg gag Cat tgg gac ( SEQ ID No :404)
134	tc tac cct gGg gag atc a ( SEQ ID No :405)
135	g gac acg gCA gct cag at ( SEQ ID No :406)
136	g ggg gca Gtg gcc ctg ( SEQ ID No :407)
137	gag gcc ggT tct cac ac ( SEQ ID No :408)
138	tcc cgg ccT ggc cgc ( SEQ ID No :409)
139	ac cac cag Cac gcc tac ( SEQ ID No :410)
140	acc tgg gcT ggc tcc c ( SEQ ID No :411)
141	g gtc acg gAg ccc cga ( SEQ ID No :412)
142	g ccg gag tTt tgg gac c ( SEQ ID No :413)
143	c ctc cag aaT atg tac ggc ( SEQ ID No :414)
144	c ctg cgg aCc ctg ctc ( SEQ ID No :415)
145	ct cag atc Tcc cag cgc ( SEQ ID No :416)
146	g ctg aga gcT tac ctg ga ( SEQ ID No :417)
147	c ggg cgc Ttc ctc cgc ( SEQ ID No :418)
148	at gac cag tTc gcc tac g ( SEQ ID No :419)
149	cgc ggg cat Aac cag ttc ( SEQ ID No :420)
150	cgg ccc gTc cgc ggg ( SEQ ID No :421)
151	gcg gac acC gcg gct c ( SEQ ID No :422)
152	tct cac atc Atc cag agc a ( SEQ ID No :423)
153	gtg ggg ccC gac ggg ( SEQ ID No :424)
154	acg gag ccC cgg gcg ( SEQ ID No :425)



Table 6-6

Probe No.	Base Sequence
155	t ccg agg aCg gag ccc ( SEQ ID No :426)
156	ac ctg cgc gAc tac tac a ( SEQ ID No :427)
157	g tcc gcc tGc gac ggc ( SEQ ID No :428)
158	tcc tgg acA gcg gcg g ( SEQ ID No :429)
159	c cga gag aAc ctg cgc a ( SEQ ID No :430)
160	g ggg ccg gGa tat tgg g ( SEQ ID No :431)
161	tg gag ggc Atg tgc gtg ( SEQ ID No :432)
162	g gag ggc aTg tgc gtg g ( SEQ ID No :433)
163	gcg gcg gaG acc gcg ( SEQ ID No :434)
164	g gag ggg ccA gaa tat tg ( SEQ ID No :435)
165	ct tgg cag aCg atg tac g ( SEQ ID No :436)
166	t tgg cag acG atg tac gg ( SEQ ID No :437)
167	cag cgg aga Acc tac ctg ( SEQ ID No :438)
168	ggc cgc ggA gag ccc ( SEQ ID No :439)
169	c acc ctC caC agg atg ta ( SEQ ID No :440)
170	cg gag cag Tgg aga acc ( SEQ ID No :441)
171	cag tgg aga Acc tac ctg ( SEQ ID No :442)
172	g atc acc cGg cgc aag t ( SEQ ID No :443)
173	c cag agc aCg tac ggc t ( SEQ ID No :444)
174	g gcg gcc cTt gtg gcg ( SEQ ID No :445)
175	acc tgg gcG ggc tcc c ( SEQ ID No :446)
176	gtc acg gCA ccc cga ac ( SEQ ID No :447)
177	agg tat ttc Cac acc gcc ( SEQ ID No :448)
178	gt ccg agg Aag gag ccg ( SEQ ID No :449)
179	g cgc aag tTg gag gcg g ( SEQ ID No :450)
180	acc tgg gcT ggc tcc c ( SEQ ID No :451)
181	tgc gtg gaT tgg ctC cg ( SEQ ID No :452)
182	cat aac cag Aac gcc tac g ( SEQ ID No :453)
183	t tgg gac cCg gag aca c ( SEQ ID No :454)
184	atc atc cag Gtg atg tat gg ( SEQ ID No :455)
185	gac ggc aag Aat tac atc g ( SEQ ID No :456)

Table 6-7

Probe No.	Base Sequence
186	at aac cag tCc gcc tac g (SEQ ID No :457)
187	ctg cgg aaG ctg cgc g (SEQ ID No :458)
188	t cac act tgG cag agg atg (SEQ ID No :459)
189	c acg ctg Cag cgc gcg (SEQ ID No :460)
190	ac cat gag gTc acc ctg a (SEQ ID No :461)
191	a cag atc tCG aag acc aac (SEQ ID No :462)
192	gcc cgt gtC gcg gag c (SEQ ID No :463)
193	g cgc acc Gcg ctc cg (SEQ ID No :464)
194	c cgc ttc atI gca gtg gg (SEQ ID No :465)
195	c ctg cgc aCc ccg ctc (SEQ ID No :466)
196	cc ccg ctc Cgc tac tac (SEQ ID No :467)
197	g tat tgg gaG cgg gag ac (SEQ ID No :468)
198	gc ggg cat Aac cag gac (SEQ ID No :469)
199	cat aac cag Gac gcc tac (SEQ ID No :470)
200	ctc cgc ggg Tat aac cag (SEQ ID No :471)
201	ccg tgg gtG gag cag g (SEQ ID No :472)
202	g cgg atc Gcg ctc cgc (SEQ ID No :473)
203	c acg ctg ttG gtg agg tt (SEQ ID No :474)
204	c ctg tgc gCg gag tCG (SEQ ID No :475)
205	gat tac atc Acc ctg aac g (SEQ ID No :476)
206	gg tat aac cGg tta gcc ta (SEQ ID No :477)
207	ag gac aga gTc tac ctg g (SEQ ID No :478)
208	aag tac aag Cgc cag gca (SEQ ID No :479)
209	ca cag act gGc cga gtg a (SEQ ID No :480)
210	gct gct gtg Gtg tgt agg (SEQ ID No :481)
211	aac ctg ctc Cgc tac tac (SEQ ID No :482)
212	cag aag tgg Aca gct gtg (SEQ ID No :483)
213	cag cgc gcG gac ccc (SEQ ID No :484)
214	c ttc atc tCt gtg ggc ta (SEQ ID No :485)
215	c gtg gag Ggg ctc cgc (SEQ ID No :486)
216	cg ctc cgc Gac tac aac (SEQ ID No :487)

Table 6-8

Probe No.	Base Sequence
217	c ggg cat aaA cag tac gc ( SEQ ID No:488)
218	c ctc cgc ggT tat aac ca ( SEQ ID No:489)
219	c ctc ctc cCc ggg cat ( SEQ ID No:490)
220	g acg gag Acc cgg gcg ( SEQ ID No:491)
221	g gag ggg cGg gag tat t ( SEQ ID No:492)
222	gca gga gat Gga acc ttc ( SEQ ID No:493)
223	g ggg ctg cTg aag ccc ( SEQ ID No:494)
224	cgg gtc aCg gcg ccc ( SEQ ID No:495)
225	t ccg agg aCg gag ccg ( SEQ ID No:496)
226	cga gag aac Ttg cgg atc ( SEQ ID No:497)
227	c gcg agt cAg agg acg g ( SEQ ID No:498)
228	g gag ccc cCc ttc atc g ( SEQ ID No:499)
229	g ggg ccg gCg tat tgg ( SEQ ID No:500)
230	t ccg aga gGg gag ccg ( SEQ ID No:501)
231	ct tgg cag aTg atg tat gg ( SEQ ID No:502)
232	g tac aag gGc cag gca c ( SEQ ID No:503)
233	tc atc cag gTg atg tat gg ( SEQ ID No:504)
234	t gac cag tcT gcc tac ga ( SEQ ID No:505)
235	gcg gac acA gcg gct c ( SEQ ID No:506)
236	tat tgg gac Ggg gag aca ( SEQ ID No:507)
237	cgc ggg tat Aac cag tac ( SEQ ID No:508)
238	ct cag atc aTc cag cgc a ( SEQ ID No:509)
239	c gcg ctc cCc tac tac a ( SEQ ID No:510)
240	at tgg gac gAg gag aca c ( SEQ ID No:511)
241	gcc cgt gCg gcg gag ( SEQ ID No:512)
242	g aag gag aCg ctg cag c ( SEQ ID No:513)
243	gcg agt ccA aga ggg ga ( SEQ ID No:514)
244	gct gtg gtC gct gtg gt ( SEQ ID No:515)
245	c ctg gag gAc ctg tgc g ( SEQ ID No:516)
246	a gct gtg gtT gct act gtg ( SEQ ID No:517)

## Table 7

## Allele-Probe List 1

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5	B*070203	10								
	B*0703	11								
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	B*0706	13								
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	B*0713	25	26	27						
	B*0714	28	21	29	30					
	B*0715	31	27							
	B*0716	11	32							
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	B*0718	28	22							
	B*0719	12	34	35	36					
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10 B\*4803 80 43 31 15 13 179 41  
B\*4804 213 212  
B\*4805 214 80 43 31 13  
B\*4806 16 31 13 179 41  
B\*4807 113 179 41  
15 B\*4901 176 56 42 82 87 52  
B\*4902 130 53 66 42 82  
B\*4903 154 54 56 22 200 66 42 35  
B\*5001 176 42 82 87 52  
B\*5002 176 42 36 82 87 52  
20 B\*5004 106 200 66 42 35  
B\*510101 194 16 56 65 42 76 95 52  
B\*510102 16 56 65 42 76 95 52  
B\*510103 194 16 56 65 59 83 103 42 35 76  
B\*510104 194 79 16 56 65 59 13 103 42 35 76  
25 B\*510105 118 95 87  
B\*510201 194 16 56 65 83 103 42 35 95 52  
B\*510202 16 56 65 83 103 42 35 95 52

- B\*5103 215 95  
B\*5104 20 42 76 95 52  
B\*5105 56 83 103 41 35 95  
B\*5106 194 79 16 56 83 103 42 35 76  
5 B\*5107 194 155 43 56 65 59 83 103 42 35 76  
B\*5108 12 76 95 52  
B\*5109 194 41 42 35 76  
B\*5110 56 65 59 13 41 42 95  
B\*5112 216  
10 B\*511301 194 113 103 42 35 76  
B\*511302 194 113 83 103 42 35 76  
B\*5114 217  
B\*5115 54 56 65 59 67 66 41 42 35  
B\*5116 194 79 16 56 65 59 83 103 42 76  
15 B\*5117 218  
B\*5118 219  
B\*5119 194 107 35 76  
B\*5120 194 12 35 76  
B\*5121 194 83 32 76  
20 B\*5122 194 89 56 65 59 83 103 42 35 76  
B\*5123 194 42 36  
B\*5124 194 79 16 56 65 59 13 42 35 76  
B\*5126 220  
B\*5128 221  
25 B\*5129 194 16 56 65 76 95  
B\*5130 95 222  
B\*5131 194 83 41 42 76

- B\*5132 223  
B\*5133 92 76  
B\*5134 194 79 16 56 65 59 83 103 151 42  
B\*520101 224 43 56 65 42 76 95 52  
5 B\*520102 194 43 56 65 42 76 95 52  
B\*520103 225 80 43 56 65 59 83 42 35 76  
B\*520104 226  
B\*5202 194 97 80 43 56 65 59 83 103 42 35 76  
B\*5203 194 43 41 42 35  
10 B\*5204 227  
B\*5205 228  
B\*5301 30 56 20 21 17 103 41 42 35 95 52  
B\*5302 56 17 41 42 35 76  
B\*5303 45 42 35 77  
15 B\*5304 54 56 23 148 103 151 41 42 35 77  
B\*5305 30 54 55 56 20 21 22 23 17 103 151 41 42 35 77  
B\*5306 194 17 103 42 35 76  
B\*5307 98 42 35  
B\*5308 30 19 54 55 56 20 21 22 23 17 103 151 42 35 77  
20 B\*5309 102 17 151 41 42 40 35 77  
B\*5401 86 52  
B\*5402 117 86 32  
B\*5501 176 32 87 52  
B\*5502 176 41 32 87 52  
25 B\*5503 26 66 32 77  
B\*5504 49 104 10 13 151 41 42 32 109 77  
B\*5505 229

- B\*5507 49 230 66 77
- B\*5508 104 10 15 13 151 41 42 35 77
- B\*5509 49 104 10 65 59 67 66 151
- B\*5510 65 59 67 66 41 32
- 5 B\*5511 231 32 77
- B\*5512 176 19 41 32 87 52
- B\*5601 176 59 41 42 35 87 52
- B\*5602 176 41 42 35 87 52
- B\*5603 176 81 82 87 52
- 10 B\*5604 104 10 66 41 42 35
- B\*5605 194 10 65 59 83 103 42 35 76
- B\*5606 194 155 79 65 59 83 103 42 35 76
- B\*5607 10 130 53 65 59 67 66 41 42 35
- B\*5608 232 42 35 77
- 15 B\*5609 104 10 20 21 22 23 17 103 151 41 42 35 77
- B\*5610 49 104 10 67 66 41 32
- B\*5611 176 23 151 41 42 35 77 63
- B\*570101 233 17 42 68
- B\*570102 234
- 20 B\*5702 13 68
- B\*570301 13 42 68
- B\*570302 235
- B\*5704 184 47 41 77
- B\*5705 236 200 237 41 35
- 25 B\*5706 238
- B\*5707 184 36 77
- B\*5708 239

- B\*5709 184 12 77  
B\*5801 236 20 87 52  
B\*5802 70 52  
B\*5804 240  
5 B\*5805 241  
B\*5806 70 35  
B\*5807 70 36  
B\*5901 176 56 41 32 87 52  
B\*670101 75 15 116 107 71 72  
10 B\*670102 15 149 113 41 116 107 32 242  
B\*6702 243  
B\*7301 244  
B\*7801 194 16 65 42 76 95 52  
B\*780201 16 31 65 42 76 95 52  
15 B\*780202 194 79 16 31 65 59 83 103 42 35 76  
B\*7803 194 89 11 65 59 83 103 42 35 76  
B\*7804 83 103 41 42 35 95  
B\*7805 155 154 80 43 31 65 59 83 42 35 76  
B\*8101 136 212  
20 B\*8201 245  
B\*8202 246  
B\*8301 136 49 20 29 47 12 35 36 77



(Example 5)

Probes for identification of HLA-C allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification  
5 Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe list in Tables 9-1 to 9-4 were used  
10 respectively, and 3  $\mu$ l of the mixed primers consisting of 1  $\mu$ l each of the respective solutions of the following primers (10 pmol/ $\mu$ l) was used:  
AAACACGGTCACCTCAGGGGGAT (SEQ ID NO: 340)  
GGCCTGAGTGTGGTTGGAACG (SEQ ID NO: 341)  
15 CCAGCTCGTAGTTGTGTCTGCA (SEQ ID NO: 342).

After PCR amplification, the sample was identified being Cw\*120202, referring to Amp Plot and Dissociation curves on a display of 5700 software and the allele-probe list in Tables 11-1 to 11-4.

20 (Example 6)

Extraction of DNA from 1 ml of human blood was performed in the same manner as in Example 1. PCR of human HLA-C was then performed in the same manner as in Example 2 except that 6  $\mu$ l of the mixed primer  
25 consisting of 1  $\mu$ l each of the solutions containing the following sequences at 10 pmol/ $\mu$ l respectively and 9  $\mu$ l of ultra pure water was used.

AAACACGGTCACCTCAGGGGGAT (SEQ ID NO: 340)

GGCCTGAGTGTGGTTGGAACG (SEQ ID NO: 341)

CCAGCTCGTAGTTGTGTCTGCA (SEQ ID NO: 342)

CCATGTGTCAACTTATGCC (SEQ ID NO: 343)

5 AGAATTACCTTTTCCAG (SEQ ID NO: 344)

AGAATTACGTTTCCAG (SEQ ID NO: 345)

At the same time, a DNA microarray was prepared to identify the allele in the specimen in the same manner as in Example 2. Probes in Tables 10-1 to 10-4 were used for the probe spots respectively.

Then, hybridization and fluorescence determination was performed using the above-prepared sample and the DNA microarray in the same manner as in Example 2 and the sample was identified as Cw\*120202 referring to the probe-allele list in Tables 12-1 to 12-4.

#### Allele list

Cw\*0102 :

20 atgcgggicalggcgccccgaaccccaicclgclgclclcgaggagccclggccclgaccgagacctgggcccgc  
cccaciccatgaagiallcllccacalcgclgccccggccggccggagagccccgccllccclccaglgggcl  
cglggacgacacgcagilcgclgggclcgacagcgaccccgaglcgagaggggagccgcggcgccgclgggcl  
gagcaggaggggcccggaglatlgggaccgggagacacagaaglacagccaggcacagactgaccgaglgagcc  
lgcggaacctgcgggclactacaaccagagcgaggccgggclccacacccclccaglggatglGlggclgcgacct  
25 gggggcccgacgggcccclccclcgcggglatgaccaglacgclacgacggcaaggallacalcgccclgaacgag  
gacctgcgclccclggaccgcccgggacacCgcggclcagalcacccagcgcaaglgggaggcgccccglgaggcgg  
agcagcggagagccclacclggagggcacglgcclggagtggtccgcagataccclggagaacgggaaggagacgcl

gcagcgcgcggaacacccaaagacacacgigacccaccaicccgicicigaccaigaggccacccigaggigcigg  
gcccigggcicicacccigcggagatcacacigaccigggcagigggatggggaggaccaaacicaggacaccgagc  
tligggagaccaggccagcaggagatggaaccticcagaagigggcagcigigAigggicccicigggagaagagca  
gagatcacgigccatgigcagcacgaggggicgccggagccccicacccigagatgggagccgicicccagccc  
5 accatccccaicgigggcatcgicgctggcctggcigicccigggcigicccagcigicccagggcigigggigcig  
tligatgigtaggaggaagagcicaggigggaaaaggaggaggcigcicicaggcigcigccagcaacagigccca  
gggcicigatgagcicicacatcgctigtaa (SEQ ID NO:1);

Cw\*0103 :

atgcgggicatggcgccccgaacccicacccigcigcicicgggagcccigggccigaccgagaccigggcicgic  
10 cccaciccatgaagatitcicacacccgigicccggccigggcgaggagccccgcicacicagigggcica  
cgigggacgacacgcagitcgigcggitcgacagcgacgccgcgagiccgagaggggagccgcccggcggcigggig  
gagcaggagggggccggaglatgggaccgggagacacagaagtaacagccagggcacagacigaccgagtagcc  
tgcggaacctgcgcggcicacacaccagagcgagggccgggicicacacccicccagiggaigigigggcigcgacct  
ggggcccgacggggcgccctcciccgggglatAaccagigcgcicagacggcaaggatlacatcgccctgaacgag  
15 gacctgcgcicccigggaccggcgggacaccgcgccicagatcacccagcgcaagigggagggcgcccgigaggcgg  
agcagcggagagcciacctggagggcacgigcigggagigggicccgcagatacctggagaacgggaaggagacgci  
gcagcgcgcggaacacccaaagacacacgigacccaccaicccgicicigaccaigaggccacccigaggigcigg  
gcccigggcicicacccigcggagatcacacigaccigggcagigggatggggaggaccaaacicaggacaccgagc  
tligggagaccaggccagcaggagatggaaccticcagaagigggcagcigigatggigccicicigggagaagagca  
20 gagatcacgigccatgigcagcacgaggggicgccggagccccicacccigagatgggagccgicicccagccc  
accatccccaicgigggcatcgicgctggcctggcigicccigggcigicccagcigicccagggcigigggigcig  
tligatgigtaggaggaagagcicaggigggaaaaggaggaggcigcicicaggcigcigccagcaacagigccca  
gggcicigatgagcicicacatcgctigtaa (SEQ ID NO:2);

Cw\*0104 :

atgcgggicatggcgccccgaacccicacccigcigcicicgggagcccigggccigaccgagaccigggcicgic  
25 cccaciccatgaagatitcicacacccgigicccggccigggcgaggagccccgcicacicagigggcica  
cgigggacgacacgcagitcgigcggitcgacagcgacgccgcgagiccgagaggggagccgcccggcggcigggig

gagcaggaggggcccggagiatl tgggaccgggagacacagaagtaaaagcggcagggcacagac l gaccgagtgagcc  
l gcggaacc l ggcggc l actlacaaccagagcgaggccggg l c l c a c a c c c t c c a g l g g a l g t l g g c l g c g a c c t  
ggggcccgcagggcgcc l c c l c c g c g g g t a l g a c c a g l c c g c c l a c g a c g g c a a g g a l l a c a l c g c c c l g a a c g a g  
g a c c l g c g c l c c l g g a c c g c T g c g g a c a c g g c g g c l c a g a l c a c c a g c g c a a g l g g g a g g c g g c c c g l g a g g c g g  
5 a g c a g l g g a g a g c c l a c c l g g a g g g c a c g l g c g l g g a g l g g c l c c g c a g a l a c c l g g a g a a c g g g a a g g a g a c g c l  
g c a g c g c g c g g a a c a c c c a a g a c a c a c g l g a c c a c c a l c c c g l c l c l g a c c a l g a g g c c a c c c l g a g g l g c l g g  
g c c c l g g g c l c l c l a c c l g c g g a g a l c a c a c l g a c c l g g c a g c g g a l g g c g a g g a c c a a a c l c a g g a c a c c g a g c  
l l g l g g a g a c c a g g c c a g c a g g a g a l g g a a c c l c c a g a a g l g g g c a g c l g t g g l g g l g c c l c l g g a g a a g a g c a  
g a g a t a c a c g l g c c a l g l g c a g c a c a g g g g c l g c c A g a g c c c c l a c c c l g a g a l g g g a g c c a l c l c c c a g c c c  
10 a c c a l c c c c a t c g l g g g c a t c g l t g c l g g c c l g g c l g t c c l g g c l g l c c l a g c t g l c c l a g g a g c l g t g A t g g c l g  
l l g l g a l g l g l a g g a g a a g a g c l c a g g l g g a a a g g a g g g a g c l g c l c l c a g g c l g c g l c c a g a a c a g l g c c c a  
g g g c l c l g a l g a g l c l c l a t c g c t l g l a a (SEQ ID NO:2);

Cw\*0105 :

g c l c c c a c l c c a t g a a g t a l l i c l l c a c a l c c g l g l c c c g g c c l g g c c g g a g a g c c c c g l l c a l c l c a g l g g g  
15 c l a c g l g g a c g a c a c g c a g l l c g l g c g g l l c g a c a g c g a c c c g c g a g l c c g a g a g g g a g c c g c g g g c g c c g l g g  
g l g g a g c a g g a g g g g c c g g a g i a t l g g g a c c g g g a g a c a c a g a a g t a a a g c g c c a g g c a c a g a c l g a c c g a g l g a  
g c c l g c g g a a c c l g c g c g g c l a c l a c a a c c a g a g c g a g g c c g g g l c l c a c a c c c t c c a g a g g a l g l c l g g c l g c g a  
c c l g g g g c c c g a c g g g c g c c l c c l c c g c g g g t a l g a c c a g l a c g c c l a c g a c g g c a a g g a l l a c a l c g c c c l g a a c  
g a g g a c c l g c g c l c c l g g a c c g c c g g a c a c c g c g c l c a g a l c a c c a g c g c a a g l g g g a g g c g g c c c g l g a g g  
20 c g g a g c a g c g g a g a g c c l a c c l g g a g g g c a c g l g c g l g g a g l g g c l c c g c a g a l a c c l g g a g a a c g g g a a g g a g a c  
g c l g c a g c g c g c g g (SEQ ID NO:4);

Cw\*0106 :

g c l c c c a c l c c a l g a a g t a l l i c l l c a c a l c c g l g l c c c g g c c l g g c c g g a g a g c c c c g l l c a l c l c a g l g g g  
c l a c g l g g a c g a c a c g c a g l l c g l g c g g l l c g a c a g c g a c c c g c g a g l c c g a g a g g g a g c c g c g g g c g c c g l g g  
25 g l g g a g c a g g a g g g g c c g g a g i a t l g g g a c c g g g a g a c a c a g a a g t a a a g c g c c a g g c a c a g a c l g a c c g a g l g a  
g c c l g c g g a a c c l g c g c g g c l a c l a c a a c c a g a g c g a g g c c g g g l c l c a c a c c c t c c a g l g g a l g t l g g c l g c g a  
c c l g g g g c c c g a c g g g c g c c l c c l c c g c g g g t a l g a c c a g l a c g c c l a c g a c g g c a a g g a l l a c a l c g c c c l g a a c

gaggaccigcgcicctggaccgccgacaccggcicagatcaccagcgcaaglgggaggcgcccgTgg  
cggagcagcggagagcciacctggaggcacgtgcgaggagggciccgagataccggagaacgggaaggagac  
gctgcagcgcgcgg(SEQ ID NO:5);

Cw\*0107:

5 gctccacitccatgaaglatitctcacatccgtgicccggcclggccgaggagccccgtitacitcagtggg  
ctacgtggacgacacgcaglitcgtgcggticgacagcgacgcccgagtcgagaggggagccgcgccgctgg  
gtggagcaggagggccggaglatgggaccgggagacacagaaglacagcgccaggcacagacigaccgagiga  
gccigcggaacctgcgcggctactacaaccagagcgaggccgggticacacccitccagtggaigtgtggcigcga  
ccitggggcccgacggcgccitcciccgAggtatgaccagtagccitacgacggcaaggattacatcgccctgaac  
10 gaggaccigcgcicctggaccgccgacaccggcicagatcaccagcgcaaglgggaggcgcccgTgagg  
cggagcagcggagagcciacctggaggcacgtgcgaggagggciccgagataccggagaacgggaaggagac  
gctgcagcgcgcgg(SEQ ID NO:6);

Cw\*0108:

gctccacitccatgaaglatitctcacatccgtgicccggcclggccgaggagccccgtitacitcagtggg  
15 ctacgtggacgacacgcaglitcgtgcggticgacagcgacgcccgagtcgagaggggagccgcgccgctgg  
gtggagcaggagggccggaglatgggaccgggagacacagaaglacagcgccaggcacagacigaccgagiga  
gccigcggaacctgcgcggctactacaaccagagcgaggccgggticacacccitccagtggaigtgtggcigcga  
ccitggggcccgacggcgccitcciccggglatgaccagtagccitacgacggcaaggattacatcgccctgaac  
gaggaccigcgcicctggaccgccgacaccggcicagatcaccagcgcaaglgggaggcgccTgagg  
20 cggagcagcggagagcciacctggaggcacgtgcgaggagggciccgagataccggagaacgggaaggagac  
gctgcagcgcgcgg(SEQ ID NO:7);

Cw\*0109:

gctccacitccatgaaglatitctcacatccgtgicccggcclggccgaggagccccgtitacitcagtggg  
ctacgtggacgacacgcaglitcgtgcggticgacagcgacgcccgagtcgagaggggagccgcgccgctgg  
25 gtggagcaggagggccggaglatgggaccgggagacacagaaglacagcgccaggcacagacigaccgagiga  
gccigcggaacctgcgcggctactacaaccagagcgaggccgggticacacccitccagtggaigtgtggcigcga  
ccitggggcccgacggcgccitcciccggglatgaccagtagccitacgacggcaaggattacatcgccctgaac

gaggacctgcgtccctggaccgccgacacccggcctcagatcaccagcgcaagtgaggaggcgccctgagg  
cggagcagTggagagccctaccggaggcgacgtgcgtggagtggtccgcagataccggagaacgggaaggagac  
gctgcagcgcgagg (SEQ ID NO:8);

Cw\*020201 :

5 atgcgggicalggcgccccgaacccctccctcgtgcgtcctcgggagcccggcccagaccagaccgggctgct  
cccactccatgaggtaattctacaccgtgtgtccggcccagccgaggagagcccacttcaatgcagtgggctta  
cgtggacgacacgcagtcgtgcggctcgacagcgacccgcgagtcgaagaggggagccgcccggcgccgtgggtg  
gagcaggagggggccggagtaattgggaccgggagacacagaagtaagaagccaggcacagactgaccgagtgaacc  
tgcggaaactAcgcggtctatcaaacagagcgaggccgggtctcacacccctcagaggatgtacggctgcgacct  
10 ggggcccgcagggcgccctccctccgaggtaatgaccagtcgcttacgacggcaaggattacatgcccgaacgag  
gacctgcgtccctggaccgccgaggacacagcggtcagatcaccagcgcaagtgaggaggcgccctgaggcgg  
agcagtgagagccctaccggaggcgagtcgtggagtggtccgcagataccggagaacgggaaggagacgct  
gcagcgcgcggaacacccaaagacacagtgaccacacatcccgctctgacctgaggccacccagaggctgg  
gcccgggcttctacccctacggagatcacactgacctggcagcgggatggcgaggaccaaactcaggacaccgagc  
15 ttgtggagaccaggccagcaggagatggaaccttcagaagtgggcagctgtgggtggcttctggagaagagca  
gagatacacgtgccatgtgcagcacgaggggtgcccggagccccctacccctgagatgggagccaatctccagccc  
accatccccatcgtgggcatcgtgtcggcctggcgtgctcggcgtgcttagctgtcttaggagctgtgggtggcgt  
ttgtgatgtgtaggaggaagagctcaggaggaaaaggaggagcgtcctcaggctgcgtccagcaacagtgccca  
gggctcgtatgagtcctcctatcgcttglaa (SEQ ID NO:9);

20 Cw\*020202 :

atgcgggicalggcgccccgaacccctccctcgtgcgtcctcgggagcccggcccagaccagaccgggctgct  
cccactccatgaggtaattctacaccgtgtgtccggcccagccgaggagagcccacttcaatgcagtgggctta  
cgtggacgacacgcagtcgtgcggctcgacagcgacccgcgagtcgaagaggggagccgcccggcgccgtgggtg  
gagcaggagggggccggagtaattgggaccgggagacacagaagtaagaagccaggcacagactgaccgagtgaacc  
25 tgcggaaactgcgcggtctatcaaacagagcgaggccgggtctcacacccctcagaggatgtacggctgcgacct  
ggggcccgcagggcgccctccctccgaggtaatgaccagtcgcttacgacggcaaggattacatgcccgaacgag  
gacctgcgtccctggaccgccgaggacacagcggtcagatcaccagcgcaagtgaggaggcgccctgaggcgg

agcagtggagagcctaccitggagggcgagtcgctggagtggtccgcagataccitggagaacgggaaggagacgct  
gcagcgcgcggaacacccaaagacacacgtgacccaccatcccgctcttgaccatgaggccacccitagggtgctgg  
gcccitgggtctctacccitAcggagatcacactgacctggcagcgggatggcgaggaccaaactcaggacaccgagc  
tltggagaccaggccagcaggagatggaaccttccagaagtgggcagctgtgggtggctctctggagaagagca  
5 gagatacacgtgccatgtgcagcacgaggggtgcccggagccccitacccitgagatgggagccatcttcccagccc  
accatccccatcgtgggcatcgtgtcgtggctggctgtccitggctgtcctagctgtcctaggagctgtgggtggctg  
tltgtatgtltaggaggaagagctcaggitggaaaaggagggagctgtctctcaggctgcgtccagcaacagtgtccca  
gggtctctgtatgagctctctatcgttgttaa (SEQ ID NO:10);

Cw\*020203 :

10 gctcccacttccatgaggtatctctacaccgctgtgtcccggcccagccgcggagagccccacttcatcgcagtggg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagttcaagaggggagccgcgggcgccgtgg  
gtggagcaggaggggcccggagtattgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtga  
acctgcggaaactgcgcggctactacaaccagagcgaggccgggtctcacacctccagaggatgtatggctgcga  
cctggggcccgacgggcgcttctccgcgggtatgaccagtcgacctacgacggcaaggattacatcgccctgaac  
15 gaggacctgcgtccttgaccgcccgcggacacAgcggctcagatcaccagcgcaagtgggagggcgcccgtaggg  
cggagcagTggagagccitacitggagggcgagtcgctggagtggtccgcagataccitggagaacgggaaggagac  
gctgcagcgcgcgg (SEQ ID NO:11);

Cw\*020204 :

atgggggtcatggcgccccgaacccctcttctgtctctcgggagcccitggccctgaccgagacctgggctgtct  
20 cccacttccatgaggtatctctacaccgctgtgtcccggcccAgccgcggagagccccacttcatcgcagtgggctta  
cgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagttcaagaggggagccgcgggcgccgtgggtg  
gagcaggaggggcccggagtattgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtgaacc  
tgcggaaactgcgcggctactacaaccagagcgaggccgggtctcacacctccagaggatgtacggctgcgacct  
ggggcccgacgggcgcttctccgcgggtatgaccagtcgacctacgacggcaaggattacatcgccctgaacgag  
25 gacctgcgtccttgaccgcccgcggacacGcggctcagatcaccagcgcaagtgggagggcgcccgtagggcgg  
agcagtggagagcctaccitggagggcgagtcgctggagtggtccgcagataccitggagaacgggaaggagacgct  
gcagcgcgcggaacacccaaagacacacgtgacccaccatcccgctcttgaccatgaggccacccitagggtgctgg

gcccigggtcttacctgaggagatcacactgacctggcagcgggaiggcaggaccacaaactcaggacaccgagc  
ttgtggagaccaggccagcaggagatggaaccttcagaagiggcagctgtgggtggctctcaggagaagagca  
gagatcacgtgccatgtgcagcacgaggggtgccggagccccacacctgagatgggagccatcttccagccc  
accatccccatcgtgggcatcgtgtcggcggcgtctcggcgtcctagctgtcctaggagctgtgggtggcgtg  
5 ttgtgatgtgtaggaggaagagctcag (SEQ ID NO:12);

Cw\*020205 :

gtctccactccatgaggtattctacaccgtgtgtcccgccccagccgaggagagccccacttcatcgcagtggg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgagltccaagaggggagccgcccggcgccgtgg  
gtggagcaggagggggccggaglatgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtga  
10 accgtcggaatcgtcggttactacaaccagagcaggccgggtctcacacctccagAggatgtatggctgcga  
ccgtggggcccgacggcgccctctccgcggtatgaccagttccgctacgacggcaaggattacatcgccctgaac  
gaggacctgcgtctcgtggaccgcccggacacGcggtcagatcaccagcgcaagtgaggagccggccgtgagg  
cggagcagTggagagccctaccgtggagggcgAggtcggtggagtggtccgcagataccgtggagaacgggaaggagac  
gttcagcgcgcgg (SEQ ID NO:13);

15 Cw\*0203 :

gtctccactccatgaggtattctacaccgtgtgtcccgccccagccgaggagagccccacttcatcgcagtggg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgagltccaagaggggagccgcccggcgccgtgg  
gtggagcaggagggggccggaglatgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtga  
accgtcggaatcgtcggttactacaaccagagcaggccgggtctcacacctccagaggtatgacggctgcga  
20 ccgtggggcccgacggcgccctctccgcggtatgaccagttccgctacgacggcaaggattacatcgccctgaac  
gaggacctgcgtctcgtggaccgcccggacacagcggtcagatcaccagcgcaagtgaggagccggccgtgTgg  
cggagcagctgagagccctaccgtggagggcgAggtcggtggagtggtccgcagataccgtggagaacgggaaggagac  
gttcagcgcgcgg (SEQ ID NO:14);

Cw\*0204 :

25 gtctccactccatgaggtGttctacaccgtgtgtcccgccccagccgaggagagccccacttcatcgcagtggg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgagltccaagaggggagccgcccggcgccgtgg  
gtggagcaggagggggccggaglatgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtga



accTgcggaaacTgcgcggcTactacaaccagagcgaggccgggTctcacacccTccagaggatgtacggcTgcga  
ccTggggcccgacgggcgcctccTccgcgggTatgaccagTccgcctacgacggcaaggattacatcgccctgaac  
gaggaccTgcgcTccTggaccgcccgggacacagcggcTcagatcaccagcgcaagTgggaggcgggcccgTgagg  
cggagcagTggagagccTaccTggagggcgagTgcgTggagTggcTccgcagataccTggagaacgggaaggagac  
5 gctgcagcgcgcg (SEQ ID NO:15);

Cw\*0205 :

gctccacTccatgaggtattTctacaccgctgTgTccggcccAgccgcggagagccccactTcatcgcatggg  
ctacTggacgacacgcagTtcgTgcggTtcgacagcgacgccgcgagTccaagaggggagccgcgggcgcctTgg  
gTggagcaggaggggcccggagTatTgggaccgggagacacagaagTacaagcgccaggcacagacTgaccgagTga  
10 accTgcggaaacTgcgcggcTactacaaccagagcgaggccgggTctcacacccTccagTggatgtatggcTgcga  
ccTggggcccgacgggcgcctccTccgcgggTatgaccagTccgcctacgacggcaaggattacatcgccctgaac  
gaggaccTgcgcTccTggaccgcccgggacacGcgggcTcagatcaccagcgcaagTgggaggcgggcccgTgagg  
cggagcagTggagagccTaccTggagggcgAgTgcgTggagTggcTccgcagataccTggagaacgggaaggagac  
gctgcagcgcgcg (SEQ ID NO:16);

15 Cw\*0206 :

gctccacTccatgaggtattTctacaccgctgTgTccggcccagccgcggagagccccactTcatcgcatggg  
ctacTggacgacacgcagTtcgTgcggTtcgacagcgacgccgcgagTccaagaggggagccgcgggcgcctTgg  
gTggagcaggaggggcccggagTatTgggaccgggagacacagaagTacaagcgccaggcacagacTgaccgagTga  
accTgcggaaacTgcgcggcTactacaaccagagcgaggccgggTctcacacccTccagaggatgtacggcTgcga  
20 ccTggggcccgacgggcgcctccTccgcgggTatgaccagTAgccTacgacggcaaggattacatcgccctgaac  
gaggaccTgcgcTccTggaccgcccgggacacggcggcTcagatcaccagcgcaagTgggaggcgggcccgTgagg  
cggagcagTggagagccTaccTggagggcgAgTgcgTggagTggcTccgcagataccTggagaacgggaaggagac  
gctgcagcgcgcg (SEQ ID NO:17);

Cw\*030201 :

25 atggggTcatgggccccgaacccTcatccTgctgctcTcgggagccTggccctgaccgagaccTgggcggcT  
ccacTccatgaggtattTctacaccgctgTgTccggcccggccgcgggagccccactTcatcgcatgggTla  
cgTggacgacacgcagTtcgTgcggTtcgacagcgacgccgcgagTccgagaggggagccgcgggcgcctTgggTg

gagcaggagggcgaggatattgggaccgggagacacagaaglacaaagccaggcacagactgaccgagtgagcc  
tgcggaacctgcgcggctactacaaccagagcgaggccgggtccacatccaccagaggatgtagtggcgcgacgt  
ggggcccgacggcgccctcccgcggtatgaccagtcggcctacgacggcaaggatatacgccccgaacgag  
gatctgcgctccggaccgcccggacacggcggctcagatcacccagcgcaagtgggaggcgccccgtgaggcgg  
5 agcagctgagagcctaccggaggggcctgtgcgtggagtggcctccgcagataccgaagaatgggaaggagacgct  
gcagcgcggaacacccaaagacacacgtgaccacacatcccgctcctgaccaagaggccacctgaggctgagg  
gccccgggtcttacctgcggagatcacactgacctggcagtggaatggggaggaccacaaactcaggacacTgagc  
ttgtggagaccaggccagcaggagatggaaccttcagaagtgggcagctgtgggtggctctcggagaagagca  
gagatcacgtgccatgtgcagcacgaggggctgcccggagccccacacctgagaatgggagccAicttcccagccc  
10 accatccccatcgtagggcatcgtgtctggccggctgtcttggctgtcttagctgtcttaggagctgtgggtggctg  
ttgtgatgtgtaggaggaagagctcaggtaggaaaaggaggaggctgtctcaggctgcgtccagcaacagtgccta  
gggtctgatgagctctcctcgttgttaa (SEQ ID NO:18);

Cw\*030202 :

atgcgggtcatggcggcccgaaacctcactctgtgtctcgggagccccggccccgaccgagacctgggcccggct  
15 cccactccaatgaggatattctacaccgtgtgttccggcccgcccgggggagccccacttcatcgcatgggctla  
cgtaggacgacacgcagttcgtgcggctcgcagcgacgccgcgagtcgagaggggagccgcccggcgccgtgggtg  
gagcaggagggggcgaggatattgggaccgggagacacagaaglacaaagccaggcacagactgaccgagtgagcc  
tgcggaacctgcgcggctactacaaccagagcgaggccgggtccacatccaccagaggatgtagtggcgcgacgt  
ggggcccgacggcgccctcccgcggtatgaccagtCgacctacgacggcaaggatatacgccccgaacgag  
20 gatctgcgctccggaccgcccggacacggcggctcagatcacccagcgcaagtgggaggcgccccgtgaggcgg  
agcagctgagagcctaccggaggggcctgtgcgtggagtggcctccgcagataccgaagaatgggaaggagacgct  
gcagcgcggaacacccaaagacacacgtgaccacacatcccgctcctgaccaagaggccacctgaggctgagg  
gccccgggtcttacctgcggagatcacactgacctggcagtggaatggggaggaccacaaactcaggacacTgagc  
ttgtggagaccaggccagcaggagatggaaccttcagaagtgggcagctgtgggtggctctcggagaagagca  
25 gagatcacgtgccatgtgcagcacgaggggctgcccggagccccacacctgagaatgggagccgtcttcccagccc  
accatccccatcgtagggcatcgtgtctggccggctgtcttggctgtcttagctgtcttaggagctgtgggtggctg  
ttgtgatgtgtaggaggaagagctcaggtaggaaaaggaggaggctgtctcaggctgcgtccagcaacagtgccta

gggcctcgtgagctctcctcgccttgtaa (SEQ ID NO:19);

CW\*030301 :

a t g c g g g t c a l g g c g c c c g a a c c c t c a t c c t g c t g c t c t c g g g a g c c ç l g g c c c l g a c c g a g a c c l g g g c c g g c t  
c c c a c t c c a l g a g g l a i f t c t a c a c c g c l g l g t c c c g g c c c g g c c g c g g g g a g c c c c a c t t c a t c g c a g t g g g c t a  
5 c g l g g a c g a c a c g c a g t l c g t g c g g t l c g a c a c g c a c g c c g c g a g l c c g a g a g g g g a g c c g c g g g c g c c g l g g g l g  
g a g c a g g a g g g g c c g g a g l a l l g g g a c c g g g a g a c a c a g a a g l a c a a g c g c c a g g c a c a g a c l g a c c g a g t g a g c c  
l g c g g a a c c t g c g c g g c l a c t a c a a c c a g a g c g a g g c c A g g l c t c a c a t c A t c c a g a g g a l g t a l g g c t g c g a c g t  
g g g g c c c g a c g g g c g c c t c c t c c g c g g g t a l g a c c a g t a c g c c t a c g a c g g c a a g g a t l a c a t c g c c c t g a a c g a g  
g a t c t g c g c t c c l g g a c c g c c g c g g a c a c g g c g g c t c a g a l c a c c c a g c g c a a g l g g g a g g c g g c c c g t g a g g c g g  
10 a g c a g c t g a g a g c c t a c c t g g a g g g c c t g l g c g l g g a g l g g c t c c g c a g a l a c c t g a a g a a l g g g a a g g a g a c g c t  
g c a g c g c g c g g a a c a c c c a a g a c a c a c g t g a c c c a c c a t c c c g t c t c l g a c c a l g a g g c c a c c c t g a g g t g c t g g  
g c c c t g g g c t f t a c c c t g c g g a g a t c a c a c l g a c c l g g c a g t g g g a l g g g g a g g a c c a a a c t c a g g a c a c l g a g c  
t l g l g g a g a c c a g g c c a g c a g g a g a l g g a a c c t l c c a g a a g l g g g c a g c l g t g G t g g l g c c t l c l g g a g a a g a g c a  
g a g a l a c a c g l g c c a l g t g c a g c a c g a g g g g c t g c c g g a g c c c c t a c c c t g a g a t g g g a g c c g t c t l c c c a g c c c  
15 a c c a t c c c c a t c g t g g g c a t c g t l g c t g g c c t g g c t g t c c l g g c l g t c c t a g c l g t c c t a g g a g c l g t g g l g g c t g  
t l g l g a l g t l g a g g a g a a g a g c t c a g g t g g a a a a g g a g g g a g c t g c t c t c a g g c t g c g t c c a g c a a c a g t g c c c a  
g g g c i c t g a l g a g t c t c t c a t c g c t t g t a a (SEQ ID NO:20) ;

CW#030302 :

atgcgggcatggcgccccgaacccatccctgcctcctgggagccctggccctgaccgagaccctgggcggct  
20 cccacatccatgaggatattctacaccgctgtgtccggcccgccgcggggagccccacttcatcgcagctgggcta  
cgtggacgacacgcagttcgtcgggttcgacagcgacccgcgagtcggagaggggagccgcggggccgtgggtg  
gagcaggagggggccggagtatgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtgagcc  
tgcggaacctgcgcggctactacaaccagagcgaggccaggcttcacatcatccagaggatgtatggctgcgacgt  
ggggcccgacgggcgccctctccgcggtatgaccagctacgctacgacggcaaggatatacgtcccctgaacgag  
25 gatctgcgtctctggaccgcccggacacggcggcCagatcaccagcgcaagtgggaggcggcccgctgaggcgg  
agcagctgagagcctacctggagggctctgtcgtggagtggctccgcagatacctgaagaatgggaaggagacgct  
gcagcgcgcggaacacccaaagacacacgtgaccaccatcccgctcttgaccatgaggccacccctgaggtgctgg

gccc|gggc|t|c|acc|t|gcggagat|cacac|gacc|ggcag|tggga|ggggaggaccaaac|caggacac|gagc  
t|t|ggagaccaggccagcaggagat|ggaacct|ccagaag|gggcagc|t|gg|gg|tgc|t|c|tggagaagagca  
gagat|acacg|gccat|t|gcagcacgaggggc|t|gccggagcccc|cac|c|t|gaga|tgggagccg|c|t|cccagccc  
accat|ccccat|c|t|gggc|at|c|t|t|gc|tggcc|tggc|t|t|c|t|ggc|t|c|t|agc|t|c|t|aggagc|t|t|gg|tggc|t|g  
5 t|t|t|gat|t|t|t|aggaggaagagc|cagg|tggaaaaggaggagc|tgc|t|c|aggc|tgc|t|ccagcaacagt|gcca  
gggc|t|t|gat|gag|t|c|t|c|at|c|g|t|t|taa (SEQ ID NO:21);

CW#030303 :

[illegible]

Cw\*030401 :

a t g c g g g i c a t g g c g c c c c g a a c c c t c a t t c c t g c t g c t c t c g g g a g c c c t g g c c c t g a c c g a g a c c t g g g c c g g c t  
c c c a c t c c a l g a g g t a t t c t a c a c c g c t g t g t c c c g g c c c g g c c g c g g g g a g c c c c a c t t c a l c g c a g t g g g c t a  
c g t g g a c g a c a c g c a g t t c g t g c g g t t c g a c a g c g a c g c c g c g a g t c c g a g a g g g g a g c c g c g g g c g c c g t g g g t g  
**20** g a g c a g g a g g g g c c g g a g t a t t g g g a c c g g g a g a c a c a g a a g t a c a a g c g c c a g g c a c a g a c t g a c c g a g t g a g c c  
t g c g g a a c c t g c g c g g c t a c t a c a a c c a g a g c g a g g c c g g g t c t c a c a t c A t c c a g a g g a t g t a t g g c t g c g a c g t  
g g g g c c c g a c g g g c g c c t c c t c c g c g g g t a t g a c c a g t a c g c c t a c g a c g g c a a g g a t t a c a l c g c c c t g a a c g a g  
g a t c l g c g c t c c t g g a c c g c c g c g g a c a c g g c g g c t c a g a t c a c c a g c g c a a g t g g g a g g c g g c c c g t g a g g c g g  
a g c a g c l g a g a g c c t a c c t g g a g g g c c t g t g c g t g g a g t g g c t c c g c a g a t a c c t g a a g a a t g g g a a g g a g a c g c t  
**25** g c a g c g c g c g g a a c a c c c a a g a c a c a c g t g a c c c a c c a t c c c g t c t c t g a c c a l g a g g c c a c c c t g a g g t g c l g g  
g c c c t g g g c t t c t a c c c t g c g g a g a t c a c a c t g a c c t g g c a g t g g g a t g g g g a g g a c c a a a c t c a g g a c a c T g a g c  
t t g t g g a g a c c a g g c c a g c a g g a g a t g g a a c c t t c c a g a a g t g g g c a g c t g t g g t g g t g c c t t c t g g a g a a g a g c a

gagatacacgtgccatgtgcagcacgagggcgtccggagccccacccctgagatgggagccgtcttcccagccc  
accatcccatcgtgggcatcgttgcgtggcctggcgtgtcctggcgtgtcctagcgtgtcctaggagcgtgtgggtggcgtg  
ttgtgagtgttaggaggaagagctcagggtggaaaaggagggagcgtgtctcaggtgtgtcctcagcaacagtgccca  
gggtctgtatgagtcctcctcgtgtgtaa (SEQ ID NO:12);

5 Cw\*030402 :

gtctccactccatgaggtatttctacaccgtgtgttccggcccgccgaggagccccacttcatcgcagtggtg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtcgagaggggagccgaggcgccgttg  
gtggagcaggaggggcccggagtattgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtga  
gcttgcggaacctgtgcggctactacaaccagagcgaggccgggtctcacatcAtccagaggatgtacggctgcga  
10 cgtggggcccgacgggcccctccctccgcggtatgaccgtacgctacgacggcaaggattacatcgccctgaac  
gaggatctgcgtctcgtggaccgccgagacacggcggtcagatcaccagcgcaagtgaggagggcccggtgagg  
cggagcagctgagagcctaccgtggaggccgtgtcgtggagtggctccgcagataccitgaagaaTgggaaggagac  
gctgcagcgccgg (SEQ ID NO:24);

Cw\*0305 :

15 gtctccactccatgaggtatttctacaccgtgtgttccggcccgccgaggagccccacttcatcgcagtggtg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtcgagaggggagccgaggcgccgttg  
gtggagcaggaggggcccggagtattgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtga  
gcttgcggaacctgtgcggctactacaaccagagcgaggccgggtctcacacctccagagCagtacggctgcga  
cgtggggcccgacgggcccctccctccgcggtatgaccgtacgctacgacggcaaggattacatcgccctgaac  
20 gaggatctgcgtctcgtggaccgccgagacacggcggtcagatcaccagcgcaagtgaggagggcccggtgagg  
cggagcagctgagagcctaccgtggaggccgtgtcgtggagtggctccgcagataccitgaagaaTgggaaggagac  
gctgcagcgccgg (SEQ ID NO:25);

Cw\*0306 :

25 gtctccactccatgaggtatttctacaccgtgtgttccggcccgccgaggagccccacttcatcgcagtggtg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtcgagaggggagccgaggcgccgttg  
gtggagcaggaggggcccggagtattgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtga  
gcttgcggaacctgtgcggctactacaaccagagcgaggccgggtctcacatcAtccagaggatgtatggctgcga

cgTggggcccgacgggcgcctccTccgcgggTatgTccagTacgcctacgacggcaaggattacatcgccctgaac  
gaggatctgcgcTccTggaccgcccgggacacggcggtcagatcaccagcgcaagTgggaggcgcccgTgagg  
cggagcagcTgagagcctaccTggagggcctgTgcgTggagTggcTccgcagataccTgaagaatgggaaggagac  
gcTgcagcgcgcg(SAQ ID NO:26);

5 Cw\*0307 :

gcTcccactccatgaggtattTlacaccgcTgTgTccggcccgcccggggagccccactTcatcgagTggg  
ctacgtggacgacacgcagTtcgTgcggtTcgacagcgacgcccgagTccgagaggggagcccgggcgccgTgg  
TgggagcaggaggggcccggagTatTgggaccgggagacacagaagTacaagcgccaggcacagacTgaccgagTga  
AccTgcggaaAcTgcgcggcTactacaaccagagcgaggccgggTctcacatcAtccagaggatgTatggctgcga  
10 cTggggcccgacgggcgcctccTccgcgggTatgaccagTacgcctacgacggcaaggattacatcgccctgaac  
gaggatctgcgcTccTggaccgcccgggacacggcggtcagatcaccagcgcaagTgggaggcgcccgTgagg  
cggagcagcTgagagcctaccTggagggcctgTgcgTggagTggcTccgcagataccTgaagaatgggaaggagac  
gcTgcagcgcgcg(SAQ ID NO:27);

Cw\*0308 :

15 atcggggTcatggcgccccgaacctTcatctgTgTctTcgggagcccTggcccTgaccgagacctgggcccgcT  
cccactccatgaggtattTlacaccgcTgTgTccggcccgcccggggagccccactTcatcgagTgggctla  
cgTggacgacacgcagTtcgTgcggtTcgacagcgacgcccgagTccgagaggggagcccgggcgccgTgggTg  
gagcaggaggggcccggagTatTgggaccgggagacacagaaCtacaagcgccaggcacagacTgaccgagTgagcc  
TgcggaacctgcgcggcTactacaaccagagcgaggccgggTctcacatcAtccagaggatgTatggctgcgacgT  
20 ggggcccgcacgggcgcctccTccgcgggTatgaccagTacgcctacgacggcaaggattacatcgccctgaacgag  
gatctgcgcTccTggaccgcccgggacacggcggtcagatcaccagcgcaagTgggaggcgcccgTgaggcgg  
agcagcTgagagcctaccTggagggcctgTgcgTggagTggcTccgcagataccTgaagaatgggaaggagacgct  
gcagcgcgcggaacacccaaagacacacgTgaccacacTcccgTctcTgaccaTgaggccacctgaggTgctgg  
gcccTgggctTctacccTcgggagatcacacTgaccTggcagTgggatgggaggagacaaacTcaggacacTgagc  
25 TtTgggagaccaggccagcaggagatTgaacctTccagaagTgggcagcTgTggTggTgctTctTggagaagagca  
gagatcacgTgcatTgTgcagcacgagggcTccggagccccTaccctTgagatgggagccgTctTcccagccc  
acctccccatcgTgggcatcgTgctggccTggcTgTccTggcTgTccTgagTgTccTaggagcTgTggTggcTg

tttgtatgttaggaggaagagctcag (SEQ ID NO:28);

Cw\*0309 :

gctccacatccatgaggtatctacaccgctgtgtcccgcccgccgagagcccccacttcatcGcagtggtg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtcgagaggggagccgcgggcgcctgg  
5 gttgagcaggagggccggagtalgggaccgggagacacagaagtaacagcggcaggcacagactgaccgagiga  
gccitgcggaacctgcgcggctactacaaccagagcgaggccgggttcacatcAtccagaggatgtatggctgcga  
ccitggggcccgacgggcgccctctccgcgggtatgaccagtagcctacgacggcaaggattacatcgccctgaac  
gaggatctgcgtctctggaccgccgaggacacggcggctcagatcaccagcgcaagtgaggagcgcccgctgagg  
cggagcagctgagagcctaccitggagggccTgtgcgtggagtggtccgcagataccitgaagaaTgggaaggagac  
10 gctgcagcgccgg (SEQ ID NO:29);

Cw\*0310 :

gctccacatccatgaggtatctacaccgctgtgtcccgcccgccgagagcccccacttcatcGcagtggtg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtcgagaggggagccgcgggcgcctgg  
gtggagcaggagggccggagtalgggaccgggagacacagaagtaacagcggcaggcacagactgaccgagiga  
15 gccitgcggaacAtgtgcggctactacaaccagagcgaggccgggttcacatcAtccagaggatgtatggctgcga  
cGtggggcccgacgggcgccctctccgcgggtatgaccagtagcctacgacggcaaggattacatcgccctgaac  
gaggatctgcgtctctggaccgccgaggacacggcggctcagatcaccagcgcaagtgaggagcgcccgctgagg  
cggagcagctgagagcctaccitggagggccTgtgcgtggagtggtccgcagataccitgaagaaTgggaaggagac  
gctgcagcgccgg (SEQ ID NO:30);

20 Cw\*0311 :

gctccacatccatgaggtatctacaccgctgtgtcccgcccgccgagagcccccgttcatctcagtggtg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtcgagaggggagccgcgggcgcctgg  
gtggagcaggagggccggagtalgggaccgggagacacagaagtaacagcggcaggcacagactgaccgagiga  
gccitgcggaacctgcgcggctactacaaccagagcgaggccAggttcacatcAtccagaggatgtatggctgcga  
25 cgtggggcccgacgggcgccctctccgcgggtatgaccagtagcctacgacggcaaggattacatcgccctgaac  
gaggatctgcgtctctggaccgccgaggacacggcggctcagatcaccagcgcaagtgaggagcgcccgctgagg  
cggagcagctgagagcctaccitggagggccTgtgcgtggagtggtccgcagataccitgaagaaTgggaaggagac

gc1gcagcgcgcgg (SEQ ID NO:31);

CW\*0312 :

gctccac tccatgaggatattctacaccgctgtgtcccgcccgccggggagccccac tcatcgcagtggg  
ctacgtggacgcacgcag ttcgtgcgg ttcgacacgcacgccgcgag tccgagaggggagccgcgggcgcctgg  
5 gtggagcaggaggggcccggag tattgggaccgggagacacagaag lacaagcggccaggcacagac taccgag tga  
gcc tgcggaacctgcgcggctactacaaccagagcgagggc Aggtctcacatcatccagaggatglatggctgcga  
cgtggggcccgacgggcgcctcc tccgcgggtatgaccag tAgcctacgcacggcaaggat taca tgccttgaac  
gaggatctgcgc tctggaccgccgcggacacggcggctcagat caccagcgcaagtgggaggcgggccgtgagg  
cggagcagctgagagcc tacc tggagggcc tgtgcgtggagtggctccgcagat acc tgaagaatgggaaggagac  
10 gctgcagcgcgcgg (SEQ ID NO:32);

CW\*0313 :

atgcgggctcattggcgccccgaacctcattcctgctgctcctgggagccctggcccctgaccgagacctgggcccggct  
cccacttccattgaggtatttctacaccgcctgctgctccggccccggccgcggggagccccacttcatcgcagtgggctta  
cgtggacgacacgcagttcgtgcggctcgacagcgacgccgcgagtcgagagggggagccgcgggcgccgtgggtg  
15 gagcaggaggggcccggagtaattgggaccgggagacacagaagtaacaagcgccaggcacagactgaccgagttagcc  
tgcggaacctgcgcggctactacaaccagagcgaggccAggtctcacacctccagaggatgtatggctgcgacgt  
ggggcccgcacgggcgccctccctccgcgggtatgaccagtagccctacgacggcaaggattacatcgcccgaacgag  
gactcgcgtccttgaccgccgcgggacacggcggctcagatcacccagcgcaagtgaggagggcccgtagggcgg  
agcagctgagagccctaccitggaggggcctgtgcgtggagtggctccgcagataccitgaagaatgggaaggagacgct  
20 gcagcgcgcggaacacccaaagacacacgtgaccacccatcccgctcttgaccatgaggccaccttaggtgctgg  
gcccitgggcttctacccitgcggagatcacactgacctggcagtgggatggggaggaccaaactcaggacactgagc  
ttgtggagaccaggccagcaggagatggaaccttcagaagtgggcagctgtgtGtggtgccctctggagaagagca  
gagatcacgttgccatgtgcagcacagggggctgcccggagcccctcacccitgagatgggagccgcttcccagccc  
accatccccatcgtgggcatcgtgtcctggcctggctgtcctggctgtcctagctgtcctaggagctgtgtgtggctg  
25 ttgtgatgtgtaggaggaagagctcaggctggaaaaggaggaggagctgctctcaggctgcgtccagcaacagtgccca  
gggctctgattgagctctcattcgtttgtaa (SEQ ID NO:33);

Cw\*0314 :



gctccacaccatgaggtatctacaccgctggtcccgcccgccgggagccccacatcgcagtggtg  
ctacgtggacgacacgcagtcgtgcggtcgacagcgacgccgagtcgagaggggagccgcccgcctgg  
gtggagcaggagggccggagtattggaccgggagacacagaagtaagcgccaggcacagacgaccgagtga  
gccctgcgaacctgcgcggctactacaaccagagcgaggccgggtctcacatcctcagaggatgtatggctgcga  
5 cgtggggcccgacgggcgctctccgcggtatgaccagtcgcctacgacggcaaggattacatcgccctgaac  
gaggacctgcgtctcggaccgccgagacaccgggtcagatcaccagcgcaagtgaggcgcccgctgcg  
cggagcagctgagagccaccggaggcgacgtgcgtggagtggctccgcagatacctgaagaatgggaaggagac  
gctgcagcgccgg (SEQ ID NO:34);

Cw\*0315 :

10 gctccacaccatgaggtatctacaccgctggtcccgcccgccgggagccccacatcgcagtggtg  
ctacgtggacgacacgcagtcgtgcggtcgacagcgacgccgagtcgagaggggagccgcccgcctgg  
gtggagcaggagggccggagtattggaccgggagacacagaagtaagcgccaggcacagacgaccgagtga  
acctgcggaacctgcgcggctactacaaccagagcgaggcgggtctcacatcctcagaggatgtatggctgcga  
cgtggggcccgacgggcgctctccgcggtatgaccagtcgcctacgacggcaaggattacatcgccctgaac  
15 gaggatctgcgtctcggaccgccgagacaccgggtcagatcaccagcgcaagtgaggcgcccgctgagg  
cggagcagctgagagccaccggaggccTgtgcgtggagtggctccgcagatacctgaagaatgggaaggagac  
gctgcagcgccgg (SEQ ID NO:35);

Cw\*0316 :

gctccacaccatgaggtatctacaccgctggtcccgcccgccgggagccccacatcgcagtggtg  
20 ctacgtggacgacacgcagtcgtgcggtcgacagcgacgccgagtcgagaggggagccgcccgcctgg  
gtggagcaggagggccggagtattggaccgggagacacagaagtaagcgccaggcacagacgaccgagtga  
gccctgcgaacctgcgcggctactacaaccagagcgaggccgggtctcacatcctcagaggatgtatggctgcga  
cgtggggcccgacgggcgctctccgcggtatgaccagtcgcctacgacggcaaggattacatcgccctgaac  
gaggatctgcgtctcggaccgccgagacaccgggtcagatcaccagcgcaagtgaggcgcccgctgagg  
25 cggagcagctgagagccaccggaggcgacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac  
gctgcagcgccgg (SEQ ID NO:36);

Cw\*040101 :

algcgggtcatggcggccgaacccatccatgctgctcgggagcccggcccagaccagaccggccggct  
cccactccatgaggatattctccacatccgtgctcggccggccgaggagccccgcttcatcgcatgggcl  
cgaggacgacacgcagttcgtaggggtcgacagcgacccgcgagtcgaagaggggagccgaggagccgtgggtg  
gagcaggagggggccggaglatgggaccgggagacacagaagtaaacgccaggcacaggctgaccgagtgaa  
5 tgcggaaactgcgcggctactacaaccagagcgaggacgggtctcacacccctcagaggatgtttggctgcgacct  
ggggccggacgggcccctccctccggggtataaccagttcgctacgacggcaaggatatacgccctgaacgag  
gacttgcgtctcggaccgccggacacggcggtcagatcaccagcgcaagtgaggagggcccgtagggcgg  
agcagcggagagcctaccggaggcgacgtgcgtggagtggtccgcagataccggagaacgggaaggagacgt  
gcagcgcgcggaacacccaaagacacacgtgaccacatcccgctctgacctgaggccacccagggctg  
10 gcccgggcttctacccggcgagatcacatgacctggcagtgggaggggaggaccaaactcaggacaccgagc  
ttgtggagaccaggccagcaggagatggaaccttcagaagtgggcagctgtgtgggtggctctcggagaagagca  
gagatcacgtgccatgttcagcacgagggcgctccggagccccacccctgagatggaagccgtctccagccc  
accatcccatctgaggcatctgtctggccctggctgtccggctgtcttagctgtcttaggagctatggctggctg  
ttgtgatgttaggaggaagagctcaggtggaaaaggaggagctgtctcaggctgcgtccagcaacagtgtcca  
15 gggctctgatgagctctcatcgctgttaa (SEQ ID NO:37);

Cw#040102 :

gctcccactccatgaggatattctccacatccgtgctcggccggccgaggagccccgcttcatcgcatggg  
ctacgtggacgacacAcagttcgtaggggtcgacagcgacccgcgagtcgaagaggggagccgaggagccgtgg  
gtggagcaggagggggccggaglatgggaccgggagacacagaagtaaacgccaggcacaggctgaccgagtg  
20 accgtcggaactgcgcggctactacaaccagagcgaggacgggtctcacacccctcagaggatgtttggctgcga  
ccggggccggacgggcccctccctccggggtataaccagttcgctacgacggcaaggatatacgccctgaac  
gaggatctgcgtctcggaccgccggacacggcggtcagatcaccagcgcaagtgaggagggcccgtaggg  
cggagcagcggagagcctaccggaggcgacgtgcgtggagtggtccgcagataccggagaacgggaaggagac  
gctgcagcgcgcgg (SEQ ID NO:38);

25 Cw#0403 :

algcgggtcatggcggccgaacccatccatgctgctcgggagcccggcccagaccagaccggccggct  
cccactccatgaggatattctacaccgtgtgtccggcccagccgaggagagccccActtcatcgcatgggcl

cgiggacgacacgcagtcgtgcggttcgacagcgacgccgcgagtcgaagagggagccgcggcgccgtgggtg  
gagcaggagggggccggagtatgggaccgggagacacagaaglacaaagccaggcacaggctgaccgagtgaaac  
tgcggaaactgcgcggctactacaaccagagcgaggacgggttcacacccctcagaggatgttggctgcgacct  
ggggccggacggggccctccctccggggtataaccagtcgcttacgacggcaaggattacatcgccctgaacgag  
5 gaictgcgtctctggaccgccgaggacacggcggctcagatcaccagcgcaagtgaggagcgcccgtagggcgg  
agcagcggagagcctaccggaggcacgtgcgtggagtggtccgcagataccggagaacgggaaggagacgt  
gcagcgcgcggaacacccaaagacacacgtgaccacccatcccgctcttgacctaggggcacccctagggtgctgg  
gcccgggctcttacctgcggagatcacactgacctggcagtgggatggggaggaccacacacaggacaccgagc  
ttgtggagaccaggccagcaggagatggaacctccagaagtgggcagctgtgggtggctctctggagaagagca  
10 gagatcacgtgccatgtcagcacgaggggtgccggagccctcaccctgagatggaagccgtcttccagccc  
accatcccatcgtgggcatcgttgcctggcctggctgtccctggctgtcttagctgtcttaggagctgtgggtggctg  
ttgtgatgttaggaggaagagctcaggtaggaaaaggaggagctgtctcaggctgcgtccagcaacagtgccca  
gggctctgatgagtcctcactcgttgttaa (SEQ ID NO:39);

Cw\*0404 :

15 gctccacacccatgaggatatttccacatccgtgtctggcccgccgcggggagccccgcttcatcgcatggg  
ctacgtggacgacacgcagtcgtgcggttcgacagcgacgccgcgagtcgaagagggagccgcgggAgccgtgg  
gtggagcaggagggggccggagtatgggaccgggagacacagaaglacaaagccaggcacaggctgaccgagtgaa  
acctgcggaaactgcgcggctactacaaccagagcgaggacgggttcacacccctcagaggatgttggctgcga  
cctggggccggacggggccctccctccggggtataaccagtcgcttacgacggcaaggattacatcgccctgaac  
20 gaggatctgcgtctctggaccgccgaggacacggcggctcagatcaccagcgcaagtgaggagcgcccgtaggg  
cggagcagctgagagcctaccggaggcacgtgcgtggagtggtccgcagataccggagaacgggaaggagac  
gctgcagcgcgcgg (SEQ ID NO:40);

Cw\*0405 :

gctccacacccatgaggatatttccacatccgtgtctggcccgccgcggggagccccgcttcatcgcatggg  
25 ctacCtggacgacacgcagtcgtgcggttcgacagcgacgccgcgagtcgaagagggagccgcgggagccgtgg  
gtggagcaggagggggccggagtatgggaccgggagacacagaaglacaaagccaggcacaggctgaccgagtgaa  
acctgcggaaactgcgcggctactacaaccagagcgaggacgggttcacacccctcagaggatgttggctgcga

ccctggggccggacgggcccctcccgccgggtataaccagtcgcctacgacggcaaggallacatcgccctgaac  
gaggatctgcgtccctggaccgcccgccgacacggcggctcagatcaccagcgcaagtgaggaggcggcccgtagg  
cggagcagcggagagccctaccctggagggcacgtgcgtggagtggctccgcagataccctggagaacgggaaggagac  
gctgcagcgcgcgg (SEQ ID NO:41);

5 Cw\*0406 :

gctcccatccatgaggatattctacaccgctgtgtcccgcccgccgagagccccAccttcacgcagtgagg  
ctacgtggacgacacgcagttcgtgcggctcgacagcgacgcccgagttcaagaggggagccgcggcgccgtgg  
gtggagcaggagggggccggagatctgggaccgggagacacagaagtacaagcgccaggcacaggctgaccgagtga  
acctgcggaaactgcgcggctactacaaccagagcaggacgggtctcacacccctcagaggatgtttggctgcga  
10 cctggggccGgacgggcccctccctcccgccgggtataaccagtcgcctacgacggcaaggallacatcgccctgaac  
gaggatctgcgtccctggaccgcccgccgacacggcggctcagatcaccagcgcaagtgaggaggcggcccgtagg  
cggagcagcTgagagccctaccctggagggcacgtgcgtggagtggctccgcagataccctggagaacgggaaggagac  
gctgcagcgcgcgg (SEQ ID NO:42);

Cw\*0407 :

15 gctcccatccatgaggatattctccacatccgtgtccTggcccgcccgccgggagccccgcttcacgcagtgagg  
ctacgtggacgacacgcagttcgtgcggctcgacagcgacgcccgagttcaagaggggagccgcggcgccgtgg  
gtggagcaggagggggccggagatctgggaccgggagacacagaagtacaagcgccaggcacagGctgaccgagtga  
acctgcggaaactgcgcggctactacaaccagagcaggacgggtctcacacccctcagaggatgtttggctgcga  
cctggggccggacgggcccctccctcccgccgggtataaccagtcgcctacgacggcaaggallacatcgccctgaac  
20 gaggatctgcgtccctggaccgcccgccgacacggcggctcagatcaccagcgcaagtgaggaggcggcccgtagg  
cggagcagcggagagccctaccctggagggcacgtgcgtggagtggctccgcagataccctggagaacgggaaggagac  
gctgcagcgcgcgg (SEQ ID NO:43);

Cw\*0408 :

gctcccatccatgaggatattctccacatccgtgtccTggcccgcccgccgggagccccgcttcacgcagtgagg  
25 ctacgtggacgacacgcagttcgtgcggctcgacagcgacgcccgagttcaagaggggagccgcgggAgccgtgg  
gtggagcaggagggggccggagatctgggaccgggagacacagaagtacaagcgccaggcacaggctgaccgagtga  
acctgcggaaactgcgcggctactacaaccagagcaggacgggtctcacacccctcagaggatgtttggctgcga

cc1ggggccggacggggcgcc1cc1ccgcggglalaaccagtlcgcc1acgacggcaaggatlacalcgccc1gaac  
gaggatl1cgclcc1ggaccgccgggacacggcgglcagatlacccagcgcaag1gggaggcgggccc1gagg  
cggagcagcggagagcc1acc1ggaggggcTgtgc1ggag1ggc1ccgcagatlacc1ggagaacgggaaggagac  
gc1gcagcgcgcgg (SEQ ID NO:44);

5 Cw\*0410 :

gc tccac tccat gaggat att cccac atccgt gtc c tggccc ggcgc ggggag cccgc t tca tgc ag tggg  
ct acgt ggcac gacac gcag ttcgt gcgg ttc gac agc gac gccgc gagtcca agagggg agccgc gggAgccgt gg  
gtgg agcagg agggg ccggagt attggg accggg agacac aga agtaca agcgc caggcac agac tgcagg agtga  
acc tgcggaa ac tgcgcggc t actaca accag agc gaggac ggg tctcac accc tccag agga tgt t tggc tgcga  
cc tgggg ccggac ggggc cctcc tccgc ggg tata accagt tgcct acgac ggc aaggat taca tgc cctgaac  
gaggat tgcgc tcc tggacc gccgc ggcac gcgcggc t cagat cacc agcga agtggg aggcggcccgt gagg  
cggagc agcgg agagcct acc tggagggcacgt tgcgtgg agtggc tccgc agat acc tggaga acggga aggagac  
gctgc agcgcgcgg (SEQ ID NO:45);

CW\*0501 :

15 atgcgggtcatggcgccccgaacccatccctgcctcctcgggagccctggccctgaccgagacctgggcccctgc  
cccatccatgaggtatctctacaccgccctgctccggccccggccgcggagagccccgcctcatcgcatgggcta  
cgtggacgacacgcagctcgtgcagctcgacagcgacgccgcgagctcaagaggggagccgcggggcgccctgggtg  
gagcaggagggggccggagtattgggaccgggagacacagaagtaacaagcgccaggcacagactgaccgagtgaaac  
tgcggaaActgcgcggctactacaaccagagcgaggccgggtctcacacctccagaggatgtatggctgcgacct  
20 ggggcccgcagggcgccctctccgcggglaaaccagctcgctacgacggcaaggattacatcgccctgaatgag  
gacctgcgctcctggaccgccgcggacaAggcggctcagatcaccagcgcaagtgaggaggcgcccgtagggcgg  
agcagcggagagccctaccggagggcacgtgcctggagtggctccgcagatacctggagaacgggaagaagacgct  
gcagcgcgcggaacacccaaagacacacgtgaccacacatcccgtctctgaccatgaggccacctgaggtgcctgg  
gcccctgggctctacccctgcggagatcacactgacctggcagcgggtaggcgaggaccacaaactcaggacaccgagc  
25 tctggagaccaggccagcaggagatggaacctccagaagtgggcagctgtgggtggctctctggagaagagca  
gagatcacgtgccatgtgcagcacgaggggctgccagagccccctacccctgagatgggGgccatctctccagccc  
accatccccatcgtgggcatcgttgcctggcctggctgtcttggctgtcttgccttggagctgtgatggctg

tttgatgtgtaggaggaagagctcaggtaggaaaaggaggagctgccttcaggctgcgtccagcaacagtgccca  
gggctctgtagagtcctcctcgttgtaa (SEQ ID NO:46);

Cw\*0502 :

gctcccacitccatgaggtatttctacaccgccgtgtccggcccgccggagagccccgttcatcgcatggg  
5 ctagggagacacgcagttcgtgcagttcgacagcgacgccgcgagttcaagaggggagccgcggcgccgtgg  
gtggagcaggagggcgaggatattgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtg  
accitcggaacitgcgggtactacaaccagagcgaggccgggtctcacacctccagaggatgtatggctgcga  
ccitggggcccgacggcgccctcccgcggtataaccagttcgctacgacggcaaggatfacatcgccctgaat  
gaggacctgcgtcttggaccgccgggacaaggcggtcagatcaccagcgcaagtgaggagggcccgtagg  
10 cggagcagcgagagcctaccitggaggcattgtcgtggagtggctGcgagataccitggagaacgggaaggagac  
gttcagcgccgg (SEQ ID NO:47);

Cw\*0503 :

atcggggtcatggcgccccgaacctcatctgtctctcgggagccctggccctgaccgagacctgggctgtt  
cccacitccatgaggtatttctacaccgccgtgtccggcccgccggagagccccgttcatcgcatgggtta  
15 cgtggagacacgcagttcgtgcagttcgacagcgacgccgcgagttcaagaggggagccgcggcgccgtgggtg  
gagcaggagggcgaggatattgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtgaa  
tgcggaacitgcgggtactacaaccagagcgaggccgggtctcacacctccagaggatgtatggctgcgacct  
ggggcccgacggcgccctcccgcggtataaccagttcgctacgacggcaaggatfacatcgccctgaatgag  
gacctgcgtcttggaccgccgggacaaggcggtcagatcaccagcgcaagtgaggagggcccgtagggcg  
20 agcagcgagagcctaccitggaggcacgttcgtggagtggctccgcagataccitggagaacgggaagaagacgt  
gcagcgccggacccccaaagacacatgtgaccaccacccatctctgacctgaggTcaccctgagggtctgg  
gcccitgggtttctacctgcggagatcacactgacctggcagcgggatggcgaggaccaaacitaggacaccgagc  
ttgtggagaccaggccagcaggagatggaaccttcagaagtgggcagctgtgggtggctcttggagaagagca  
gagatcacgtgccatgtgcagcagggggctgccagagccccctacccctgagatgggggccaatctccagccc  
25 accatccccatcgtgggcatcgtgtcgtggctggctgtctggctgtcttagctgtcttaggagctgtgatggctg  
ttgtgatgttaggaggaagagctcaggtaggaaaaggaggagctgccttcaggctgcgtccagcaacagtgccca  
gggctctgtagagtcctcctcgttgtaa (SEQ ID NO:48);

Cw\*0504 :

gctccacatccatgaggatattctacaccgccgtgtcccgcccgccgagagccccgcattcatcgcatggg  
ctacgtggacgacacgcagttcgtgcagttcgacagcgacgccgcgagttcaagaggggagccgcgggcgccgtgg  
gtggagcaggaggggcccggaglatgggaccgggagacacagaagtaagaagccaggcacagactgaccgagtaga  
5 accitcggaatactgcgcggctactacaaccagagcgaggccgggtctcacacccctcagaggatgtatggctgcga  
ccitggggcccgacgggcccctctccgcggtatgaccagttcgccctacgacggcaaggattacatcgccctgaat  
gaggacctgcgtctctggaccgccgagacaaggcggtcagatcacccagcgcaagtgggagggcgcccgtagg  
cggagcagcggagagccctaccitggagggcacgtgcgtggagtggctccgcagataccitggagaacgggaagAagac  
gctgcagcgccgg (SEQ ID NO:49);

10 Cw\*0505 :

gctccacatccatgaggatattctacaccgccgtgtcccgcccgccgagagccccgcattcatcgcatggg  
ctacgtggacgacacgcagttcgtgcagttcgacagcgacgccgcgagttcaagaggggagccgcgggcgccgtgg  
gtggagcaggaggggcccggaglatgggaccgggagacacagaagtaagaagccaggcacagactgaccgagtaga  
accitcggaatactgcgcggctactacaaccagagcgaggccgggtctcacacccctcagaggatgtatggctgcga  
15 cGtggggcccgacgggcccctctccgcggtataaccagttcgccctacgacggcaaggattacatcgccctgaat  
gaggacctgcgtctctggaccgccgagacaaggcggtcagatcacccagcgcaagtgggagggcgcccgtagg  
cggagcagcggagagccctaccitggagggcacgtgcgtggagtggctccgcagataccitggagaacgggaagAagac  
gctgcagcgccgg (SEQ ID NO:50);

Cw\*0506 :

20 gctccacatccatgaggatattctacaccgccgtgtcccgcccgccgagagccccgcattcatcgcatggg  
ctacgtggacgacacgcagttcgtgcagttcgacagcgacgccgcgagttcaagaggggagccgcgggcgccGgtgg  
gtggagcaggaggggcccggaglatgggaccgggagacacagaagtaagaagccaggcacagactgaccgagtaga  
accitcggaatactgcgcggctactacaaccagagcgaggccgggtctcacacccctcagaggatgtatggctgcga  
ccitggggcccgacgggcccctctccgcggtataaccagttcgccctacgacggcaaggattacatcgccctgaat  
25 gaggacctgcgtctctggaccgccgagacaaggcggtcagatcacccagcgcaagtgggagggcgcccgtagg  
cggagcagcggagagccctaccitggagggcacgtgcgtggagtggctccgcagataccitggagaacgggaagaagac  
gctgcagcgccgg (SEQ ID NO:51);

Cw\*0602 :

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cgtggagacacgcagltcgtgcggttcgacagcgacgcccgagltccgagaggggagccCggggcgccgtgggtg  
5 gagcaggagggggccggagtatgggaccgggagacacagaagtaagcgccaggcacaggctgaccgagtgaacc  
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10 gcagcgcgcggaacacccaaagacacacgtgaccacatcccgctcctgacatgaggccacccgtaggctgctgg  
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15 ttgtgatgtgtaggaggaagagctcagggtggaaaaggaggagctgtctcaggctgcgtccagcaacagtgccca  
gggtctgtatgagctctcctatcgttgttaa (SEQ ID NO:52);

Cw\*0603 :

gtctccacatccatgaggtatcttcaaccgtTgtgtccggcccgcccgagagagcccgcttcaatcagtggtg  
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20 gtggagcaggagggggccggagtatgggaccgggagacacagaagtaagcgccaggcacaggctgaccgagtga  
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25 gctgcagcgcggtg (SEQ ID NO:53);

Cw\*0604 :

gtctccacatccatgaggtatcttcaaccgtTgtgtccggcccgcccgagagagcccgcttcaatcagtggtg



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5 gaggacctgcgctccctggaccgcccgggacacggcggtcagatcacccagcgcaagtgggaggcgggccgtgagg  
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Cw\*0605 :

gctccacatccatgagglatlctgacaccgccgtgtccggcccgccgcggagagccccgcttcatctcagctggg  
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gaggacctgcgctccctggaccgcccgggacacGcgggctcagatcacccagcgcaagtgggaggcgggccgtgagg  
15 cggagcagcggagagccctaccctggagggcacgtgcgtggagtggctccgcagataccctggagaacgggaaggagac  
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Cw\*0606 :

gctccacatccatgagglatlctgacaccgccgtgtccggcccgccgcggagagccccgcttcatctcagctggg  
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20 gtggagcaggaggggcccggaglatlgggaccgggagacacagaagtaaaagcgccaggcacaggctgaccgagtg  
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25 gctgcagcgcgcggaacacccaaagacacagtgaccacatcccgtctctgaccatgaggccacccctgaggctgc  
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gcagagatacacgigccatgtgcagcacgagggcgccagagccccaccctgagatgggagccaatctccag  
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Cw\*0607 :

5 gctcccatccatgaggtatctgcacaccgccgtgtccggccccggccgagagccccgttcaatctcagtggg  
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10 gaggaccgtcgtctctggaccgccggacacggcggtcagatcaccagcgcaagtgggagggcgcccgtaggg  
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gtgcagcgccgg (SEQ ID NO:57);

Cw\*0608 :

gctcccatccatgaggtatctgcacaccgccgtgtccggccccggccgagagccccgttcaatctcagtggg  
15 ctacgtggagacacgcagttcgtgcggttcgcacagcgacgccgagtcgagaggggagccccgggcccgtgg  
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20 cggagcagTggagagcctaccggaggcgAggtcgtggagtggtccgcagataccggagaacgggaaggagac  
gtgcagcgccgg (SEQ ID NO:58);

Cw\*0609 :

gctcccatccatgaggtatctgcacaccgccgtgtccggccccggccgagagccccgttcaatctcagtggg  
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25 gtggagcaggaggggcccggagtattgggaccgggagacacagaagtacaagcgccaggcacaggctgaccgagtg  
accgtcggaatcgtcggttactacaaccagagcgaggacgggtctcacacccctccagtggaatgtatggctgcga  
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gaggacc|gcgc|cc|ggaccgccgcggacacggcggc|caga|caccagcgcaag|gggaggcggccc|gagg  
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CW#070101 :

5 atgcgggicalggcgcggcgagccctccctcgtgcctcgcgggaggcclgggcccgaccgagaccgggctgc  
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cgaggacgacacgcagctcgtgcggctcgacagcgacccgagctccgagaggggagccgaggccgcccgggctg  
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15 ttgtggagaccaggccagcaggagatggaaacctccagaagtgggcagctgtgggtggctctcggacaagagca  
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20 Cw\*070102 :

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25 tgcggaaccclgcgcggclacclacaaccagagcgaggacgggcllcacacccclccagaggalgtatggcltgcgacccl  
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gcagcgcgcagaacccccaaagacacacgtgacccaccacccccctctctgacatgaggccacccctgaggtgctgg  
gcccgggctctctacccctgcggagatcacactgacctggcagcgggatggggaggaccagaccaggacaccgagc  
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5 gagatacacgtgccatagcagcacgaggggctgcaagagccccctacccctgagctgggagccaatctccagccT  
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Cw\*070201 :

10 atgcgggtcatggcgccccgagccccctctctgtctgtctctcgggaggccctggccctgaccgagacctgggctgtct  
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tgcggaacctgcgcggctactacaaccagagcgaggacgggtctcacacccctcagaggatgtctggctgcgacct  
15 ggggccccgacggcgccctctcgcgggtatgaccagctccgctacgacggcaaggattacatcgccctgaacgag  
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20 ttgtggagaccaggccagcaggagatggaacctccagaagtgggcagctgtggtggctctctggacaagagca  
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25 Cw\*0703 :

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5 gcggagcagcigagagcctaccitggagggActigtcgtggagtggctccgcagataccitggagaacgggaaggaga  
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10 gcccacatccccatcatgggcatcgttgcitggcctggctgtccitggitgtcttagctgtcttggagctitggct  
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cccagggtctgaltgagctctctacatcacitgttaa (SEQ ID NO:63);  
Cw\*070401 :  
atgcgggtcatggcgccccgagcccctctctctgtctctcgggaggccitggccctgaccgagacctgggctgt  
15 : cccacitcatgaggatitctgacaccgctgtcccgcccgcccgaggagccccgcttcatctcagctgggctat  
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gggcctcgtatgagtcctcctcacttgtaa (SEQ ID NO:64);

Cw\*070402:

a tgcgggtcatggcgccccgagccctccctcctgcctcctcgggagggcctggccctgaccgagacc tgggcc tgc t  
cccac tcca tgggtat ttcgacaccgccgtgtcccgccccggccgaggagccccgc t tca tctcag tgggct a  
5 cgtggacgacacgcag t tgc tgcgg ttcgacagcgacgccgcgag tccgagaggggagccccgggcgcgtgggtg  
gagcaggagggggccggagt t tgggaccgggagacacagaag tacaagcgccaggcacaggc t gaccgag t gacc  
tgcggaacctgcgcggctactaTaaccagagcgaggacgggtctcacacctccagaggatgtatggctgcgacct  
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gacctgcgc tcc tggaccgccgaggacaccgcggctcagatcaccagcgcaagt tggaggcgccccgtgcggcgg  
10 agcaggacagagcctacctggagggcacgtgcgtggagtggctccgcagat acc tggagaacgggaagaagacgt  
gcagcgcgcggaacccccaaagacacacgtgacccaccacccccctctctgacctgaggccacct t gagg tgc tgg  
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t t tgggagaccagggcagcaggagatggaacct tccagaagtgggcagc t tgg tgg tggct tctggacaagagca  
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15 acctccccatcatgggcatcgt tgc tggcctggctgtcttgg t tgc tctagc tgc tct tggagc t tgg t caccg  
ctatgatgt t gtaggaggaagagc t cagg tggaaaaggaggagc tgc tctcaggc tgc tgcagcaacag t gcccc  
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Cw\*0705:

gctccac tcca tgggtat ttcgacaccgccgtgtcccgccccggccgaggagccccgc t tca tctcag tggg  
20 ctacgtggacgacacgcag t tgc tgcgg ttcgacagcgacgccgcgag tccgagaggggagccgcgggcgcctgg  
gtggagcaggagggggccggagt t tgggaccgggagacacagaag tacaagcgccaggcacaggc t gaccgag tga  
gct tgcggaacctgcgcggctactacaaccagagcgaggacgggtctcacacctccagaaTa t g t tggctgcga  
cc tggggcccgacgggcgcctccctccgcggtatgaccagt tgcctacgacggcaaggat taca tgcctcgaac  
gaggacctgcgc tcc tggaccgccgaggacaccgcggctcagatcaccagcgcaagt tggaggcgccccgtgcgg  
25 cggagcagc t gagagcctacctggagggcacgtgcgtggagtggctccgcagat acc tggagaacgggaaggagac  
gctgcagcgcgag (SEQ ID NO:66);

Cw\*0706:

aTgcgggTcatggcgccccgagcccTccTccTgcTgcTcTcgggaggcTggcccTgaccgagaccTgggcccTgcT  
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5 TgcggaaccTgcgcggcTactacaaccagagcgaggacgggTcTcacacccTccagaggatTgTatggcTgcgaccT  
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10 gcccTgggTcTcTaccTgcggagatcacacTgaccTggcagcgggatggggaggaccagaccaggaacccgagc  
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15 gggcTcTgTgagTcTcTcTcTcTcTgTaa (SEQ ID NO:67);

Cw\*0707 :

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TgggagcaggagggggccggagTatTgggaccgggagacacagaacTacaagcgccaggcacaggcTgaccgagTga  
20 accTgcggaaAcTgcgcggcTactacaaccagagcgaggccgggTcTcacacccTccagaggatTgTatggcTgcga  
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gaggaccTgcgTccTggaccgcccggacaccgTggcTcagatcacccagcgcaagTggaggcgggccgTgTgg  
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gcTgcagcgcgAg (SEQ ID NO:68);

25 Cw\*0708 :

gTccccacTccatgagglatTtcgacaccgccgTgTcccggcccggccgagagagccccgTlTcaTcTcagTggg  
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gtggagcaggaggggcccggagtaattgggaccgggagacacagaagtacaagcgccaggcacaggctgaccgagtaga  
gccitgcggaacctgcgcggtactacaaccagagcgaggacgggtctcacacctccagaggatgtTggctgcga  
ccitggggcccgacgggcgccctctccgcggtatgaccagtcgacctacgacggcaaggattacatcgccctgaac  
gaggacctgcgctccitggaccgcccggacaccgcggtcagatcaccagcgcaagtTggaggcgggccgtgcgg  
5 cggagcagctgagagccctaccitggagggcacgtgcgtggagtggctccgcagataccitggagaacgggaaggagac  
gctgcagcgcgAg (SEQ ID NO:69);

Cw\*0709 :

gctcccactccatgaggtaattcgacaccgcccgtgtccggccccggccgagagccccgcttcaatcagitggg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtcgagaggggagccgcgggcgccgtgg  
10 gtggagcaggaggggcccggagtaattgggaccgggagacacagaactacaagcgccaggcacaggctgaccgagtaga  
acctgcggaactgcgcggtactacaaccagagcgaggAcgggtctcacacctccagaggatgtAtggctgcga  
ccitggggcccgacgggcgccctctccgcggtatgaccagtcgacctacgacggcaaggattacatcgccctgaac  
gaggacctgcgctccitggaccgcccggacaccgcggtcagatcaccagcgcaagtTggaggcgggccgtgcgg  
cggagcagctgagagccctaccitggagggcacgtgcgtggagtggctccgcagataccitggagaacgggaaggagac  
15 gctgcagcgcgAg (SEQ ID NO:70);

Cw\*0710 :

gctcccactccatgaggtaattcgacaccgcccgtgtccggccccggccgagagccccgcttcaatcagitggg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtcgagaggggagccgcgggcgccgtgg  
gtggagcaggaggggcccggagtaattgggaccgggagacacagaagtacaagcgccaggcacaggctgaccgagtaga  
20 gccitgcggaacctgcgcggtactacaaccagagcgaggacgggtctcacatcAtccagaggatgtCtggctgcga  
ccitggggcccgacgggcgccctctccgcggtatgaccagtcgacctacgacggcaaggattacatcgccctgaac  
gaggacctgcgctccitggaccgcccggacaccgcggtcagatcaccagcgcaagtTggaggcgggccgtgcgg  
cggagcagctgagagccctaccitggagggcacgtgcgtggagtggctccgcagataccitggagaacgggaaggagac  
gctgcagcgcgAg (SEQ ID NO:71);

25 Cw\*0711 :

atgcgggtcatggcgccccgagccctctctgtctgtctcgggaggccitggccctgaccgagacctgggctgtct  
cccactccatgaggtaattcgacaccgcccgtgtccggccccggccgagagccccgcttcaatcagitgggctat



cgtaggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtcgagaggggagccccgggcgccgtgggtg  
gagcaggagggggccggaglatgggaccgggagacacagaaglaaagcgccaggcacaggctgaccgagtagcc  
tgcggaacctgcgcggctactacaaccagagcgaggacgggttcacacccitccagaggatgtaggtgcgacct  
ggggcccgacgggcgcctcctccgcggtatgaccagttcgctacgacggcaaggattacatcgccctgaacgag  
5 gacctgcgtcctggaccgccgcggacaccgcggctcagatcaccagcgcaagttggaggcgggccgtgcggcgg  
agcaggaCagagccitacctggagggcacgtgcgtggagtaggtccgcagatacctggagaacgggaagaagacgt  
gcagcgcgcggaacccccaaagacacagtgaccaccacccccctctgacctgaggccacctgaggtagctgg  
gcccgggcttctacctgcggagatcacatgacctggcagcgggaggggaggaccagaccaggacaccgagc  
ttgtggagaccaggccagcaggagatggaacctccagaagtagggcagctgtggtggtagcttctggacaagagca  
10 gagatcacgtgccatagcagcacgaggggtcgcaagagccccctacctgagctgggagccatcttccagccc  
acctccccatcatgggcatcgttgcgtggctggctgtcctgggtgtcctagctgtccttggagctgtggtagccg  
ctatgatgttaggaggaagagctcaggtaggaaaaggaggagctgtctcaggctgcgtGcagcaacagtgccca  
gggctctgatgagttctctatcgcttgtaa (SEQ ID NO:72);

Cw\*0712 :

15 gctccctacatccatgaggtatctcgacaccgccgtgtcccgccccggccgcggagagccccgttcatctcagtaggg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtcgagaggggagccccgggcgccgtgg  
gtggagcaggagggggccggaglatgggaccgggagacacagaaglaaagcgccaggcacaggctgaccgagtaga  
gcctgcggaacctgcgcggctactacaaccagagcgaggacgggttcacacccitccagaggatgtaggtgcga  
cctggggcccgacgggcgcctcctccgcggtatgaccagttcgctacgacggcaaggattacatcgccctgaac  
20 gaggacctgcgtcctggaccgccgcggacaccgcggctcagatcaccagcgcaagtagggaggcgggccgtgcgg  
cggagcaggaCagagccitacctggagggcacgtgcgtggagtaggtccgcagatacctggagaacgggaagaagac  
gctgcagcgcgcg (SEQ ID NO:73);

Cw\*0713 :

— gctccctacatccatgaggtatctcgacaccgccgtgtcccgccccggccgcggagagccccgttcatctcagtaggg  
25 ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtcgagaggggagccccgggcgccgtgg  
gtggagcaggagggggccggaglatgggaccgggagacacagaaglaaagcgccaggcacaggctgaccgagtaga  
gcctgcggaacctgcgcggctactacaaccagagcgaggacgggttcacacccitccagaggatgtctggctgcga

ccctggggcccgacgggcgcctccctccgcggtatgaccagTcgccctacgacggcaaggat lacatcgccctgaac  
gaggacctgcgctccctggaccgccgaggacaccgcggtcagatcaccagcgcaagtTggaggcgggcccgctgcgg  
cggagcagctgagagcctaccctggagggcacgtgcgtggagtggctccgcagat accctggagaacgggaaggagac  
gctgcagcgcgcAg (SEQ ID NO:74);

5 Cw\*0714 :

gcctccacitccatgaggatattcgacaccgccgtgtcccgccccggccgaggagccccgcttcatctcagtggg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgagctccgagaggggagccgccccgctgtgg  
gtggagcaggaggggcccggagttatgggaccgggagacacagaagtacaagcgccaggcacaggctgaccgagtga  
gccctgcggaacctgcgcggtactacaaccagagcgaggacgggtctcacacccctccagaggatgtacggctgcga

10 ccctggggcccgacgggcgcctccctccgcggtatgaccagctccgctacgacggcaaggat lacatcgccctgaac  
gaggacctgcgctccctggaccgccgaggacaccgcggtcagatcaccagcgcaagtTggaggcgggcccgctgcgg  
cggagcagctgagagcctaccctggagggcacgtgcgtggagtggctccgcagat accctggagaacgggaaggagac  
gctgcagcgcAcag (SEQ ID NO:75);

Cw\*0715 :

15 gcctccacitccatgaggatattcgacaccgccgtgtcccgccccggccgaggagccccgcttcatctcagtggg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgagctccgagaggggagccgccccgctgtgg  
gtggagcaggaggggcccggagttatgggaccgggagacacagaagtacaagcgccaggcacaggctgaccgagtga  
gccctgcggaacctgcgcggtactacaaccagagcgaggacgggtctcacacccctccagaggatgtctggctgcga

20 ccctggggcccgacgggcgcctccctccgcggtatgaccagctccgctacgacggcaaggat lacatcgccctgaac  
gaggacctgcgctccctggaccgccgaggacaccgcggtcagatcaccagcgcaagtTggaggcgggcccgctgcgg  
cggagcagctgagagcctaccctggagggcgAgctgcgtggagtggctccgcagat accctggagaacgggaaggagac  
gctgcagcgcgcAg (SEQ ID NO:76);

Cw\*0716 :

25 gcctccacitccatgaggatattcgacaccgccgtgtcccgccccggccgaggagccccgcttcatctcagtggg  
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgagctccgagaggggagccgccccgctgtgg  
gtggagcaggaggggcccggagttatgggaccgggagacacagaaCtacaagcgccaggcacaggctgaccgagtga  
gccctgcggaacctgcgcggtactacaaccagagcgaggccgggtctcacacccctccagaggatgtatggctgcga

ccTggggcccgacgggcgccTccTccgCGGgTgTgaccagTccgCclacgacggcaaggatTacaTcgccTgaac  
gaggaccTgcgcTccTggaccgCCgCGgacaccgCGgTcagaTcaccagcgcaagTggaggCGggccgTgcgg  
cggagcagcTgagagccTaccTggagggcacgTgcgTggagTggTccgcagataccTggagaacgggaaggagac  
gcTgcagcgcgAg (SEQ ID NO:77);

5 Cw\*0717:

gTccccacTccatgaggTatTcgacaccgCCgTgTccCGggccCGgCGgagagccccgTlcaTcTcagTggg  
cTaccTggacgacacgcagTlccTgcggTlccagagcgacgCCgCGagTccgagaggggagccCGggcgccgTgg  
gTggagcaggaggggCCgagTatTgggaccgggagacacagaagTacaagcgccaggcacaggcTgaccgagTga  
gccTgcggaaccTgcgcggcTaclacaaccagagcgaggacgggTlccacaccTccagaggatgTcTggcTgcga

10 ccTggggcccgacgggcgccTccTccgCGGgTgTgaccagTccgCclacgacggcaaggatTacaTcgccTgaac  
gaggaccTgcgcTccTggaccgCCgCGgacaccgCGgTcagaTcaccagcgcaagTgggagggCGggccgTgcgg  
cggagcagcTgagagccTaccTggagggcacgTgcgTggagTggTccgcagataccTggagaacgggaaggagac  
gcTgcagcgcgcaagccccaaagacacacgTgaccaccacccccTcTcTgaccaTgaggccaccTgaggTgc  
TgggcccTgggTlccTaccTgcggagatcacacTgaccTggcagcggaTggggaggaccagaccaggacaccg  
15 agcTlTggagaccaggccagcaggagatTggaaccTccagaagTgggcagcTlTggTggTgcTlccTggacaaga  
gcagagatcacgTgccatTgcagcagcaggggTlcaagagccccTaccTgagTggg (SEQ ID  
NO:78);

Cw\*0718:

aTgcggTlcaTggcgccccgagcccTccTccTgcTgTcTcgggaggccTggcccTgaccgagaccTgggcccTgcT  
20 cccacTccatgaggTatTcgacaccgCCgTgTccCGggccCGgCGgagagccccgTlcaTcTcagTgggTla  
cgTggacgacacgcagTlccTgcggTlccagagcgacgCCgCGagTccgagaggggagccCGggcgccgTgggTg  
gagcaggaggggCCgagTatTgggaccgggagacacagaacTacaagcgccaggcacaggcTgaccgagTgagcc  
TgcggaaccTgcgcggcTaclacaaccagagcgaggacgggTlccacaccTccagaggatgTatggcTgcgaccT  
ggggcccgacgggcgccTccTccgCGGgTgTgaccagTccgCclacgacggcaaggatTacaTcgccTgaacgag  
25 gaccTgcgcTccTggaccgCCgCGgacaccgCGgTcagaTcaccagcgcaagTggaggCGggccgTgcggcgg  
agcagcTgagagccTaccTggagggcacgTgcgTggagTggTccgcagataccTggagaacgggaaggagacgcT  
gcagcgcgcaagccccaaagacacacgTgaccaccacccccTcTcTgaccaTgaggccaccTgaggTgcTgg

gcccTgggcTtTcTaccTtgcggagatTcacatTgaccTgggcagcgggaTggggaggaccagaccaggacaccgagc  
TtTgTggagaccaggccagcaggagatTggaaccTtccagaagTgggcagcTgTggTggTgcccTtTcTggacaagagca  
gagatacacgTgccataTgcagcacgaggggcTgcaagagccccTaccTcTgagcTgggagccatcTtcccagccc  
accatccccatcatgggcatcgtTgcTggccTggcTgTcctTggtTgtcctagcTgtcctTggagcTgtggtTaccg  
5 cTatgaltgtTaggaggaagagcTcaggTggaaaaggaggagcTgctcTcaggTtgcgTgcagcaacagTgccc  
gggcTcTgatgagTcTcTcatcactTgtaa (SEQ ID NO:79);

CW\*080101 :

atgcgggtcatalggcgcgccgaacctcattctgctgctcgggagccctggcccagaccagacctgggcccgtc  
cccacaccatgaggatattctacaccgccgtgctccggcccgccgcggagagccccgcctcattcgcagtgggccta  
10 cgtggacgacacgcagttcgtgcagttcgacagcgacccgcgcgagttcaagaggggagcccgccggcgccgtgggtg  
gagcaggagggggccggagtaattgggaccgggagacacagaagtaacaagcgccaggcacagactgaccgagtgagcc  
tgcggaacctgcgccgtactacaaccagagcgaggccgggtctcacacctccagaggatgtatggctgcgacct  
ggggcccgacggcgccctctccgcgggtataaccagttcgcttacgacggcaaggatatacgccttgaaatgag  
gacctgcgctctctggaccgccgcggacacggcggtcagatcaccagcgcaagtgggaggcgcccgctacggcg  
15 agcagcTgagagcctacctggagggcacgtgctggagtggtccgcagatacctggagaacgggaagaagacgct  
gcagcgcgcggaacacccaaagacacacgtgaccaccatcccgctcttgaccatgaggccacctgaggctgctgg  
gccc.tgggcttctacctgctggagatcacactgacctggcagcgggatggcgaggaccacaaactcaggacaccgagc  
ttgtggagaccaggccagcaggagatggaaccttcagaagtgggcagctgtgggtggctctctggagaagagca  
gagatcacactgccaatgtgcagcacagggggc.tgccagagccccctacccctgagatgggGcccaatctcccagccc  
20 accatccccatcg.tgggcatcg.tgctggcc.tggctgtcc.tggctgtcc.tagctgtcc.taggagctgtgatggctg  
ttgtgatgtgtaggaggaagagctcagg.tggaaaaggaggggagctgctctcaggctgctgtccagcaacagtgccca  
gggctctgatgagctctcattcgctt.tgtaa (SEQ ID NO:80);

CW#080102 :

25 gctccac tccatgaggia tttctacaccgccg lglcccggccggccg cggagagcccgct lcatcgcag tggg  
ctacg tggacgacacgcag ttcg tgcag ttcgacagcgacgccg cgag tccaagaggggagccgcgggcgccgtgg  
gtggagcaggaggggccggag tatl tgggaccgggagacacaga agtacaagcgccaggcacagactgaccgagtga  
gcc tgcggaacctgcgcggctactacaaccagagcgaggccgggtctcacaccc tccagaggatg tACggctgcga

cc tggggcccgacgggcgcctcc tccgcgggtaaaaccag tgcctacgacggcaaggattacatcgccctgaat  
gaggacctgcgc tcc tggaccgccgcggacacggcggctcagatcaccagcgcaag tgggaggcggcccg tAcgg  
cggagcagctgagagcc tacc tggaggcacgtgcgtggag tggc tccgcagat acc tggagaacgggaagaagac  
gctgcagcgcgcg (SEQ ID NO:81);

5 Cw\*0802 :

atgcggg tcatggcgccccgaaccc tcatcc tgc tgc tctcgggagccc tggccc taccgagacctgggccc tgc t  
cccac tccatgagg tatl tctacaccgccgtgtcccgcccgccgcggagagccccgc t tcatcgcag tgggcta  
cgtggacgacacgcag t tgc tgcag t tgcacagcgacgccgcgag tccaagaggggagccgcggcgccgtgggtg  
gagcaggagggggccggag tatl tgggaccgggagacacagaagtacaagcgccaggcacagactgaccgag t gaggc  
10 tgcggaacctgcgcggctactacaaccagagcgaggccgggtctcacaccc tccagaggatgtatggctgcgacct  
ggggcccgacgggcgcctcc tccgcgggtaaaaccag t tgcctacgacggcaaggattacatcgccctgaatgag  
gacctgcgc tcc tggaccgccgcggacaAggcggctcagatcaccagcgcaag tgggaggcggcccg t gaggcgg  
agcagcgagagcc tacc tggaggcacgtgcgtggag tggc tccgcagat acc tggagaacgggaagaagacgc t  
gcagcgcgcggaacacccaaagacacacgtgacccacac tcccg tct t gacatgaggccaccc t gagg tgc tgg  
15 gccc tgggct tctaccc tgcggagatcacac t gacctggcagcgggatggcgaggaccaaactcaggacaccgagc  
t t g tggagaccaggccagcaggagatggaaacctccagaagtgggcagc t g tgg tgg tgc t t tggagaagagca  
gagatcacgtgccatgtgcagcacgaggggtgccagagcccc t cacc t gaga tgggGccalc t tccagccc  
accatcccatcgtgggca t cgt tgc tggc tggc tgc tcc tggc tgc tcc t agc tgc tcc t aggagc t g tga tggc t g  
t t g tga t g t gaggaggaagagc t cagg tggaaaaggaggagc tgc t t caggc tgc tccagcaacag t gccc a  
20 gggctctga t g ag t c t c t c at c g c t g taa (SEQ ID NO:82);

Cw\*0803 :

atgcggg tcatggcgccccgaaccc tcatcc tgc tgc tctcgggagccc tggccc taccgagacctgggccc tgc t  
cccac tccatgagg tatl tctacaccgccgtgtcccgcccgccgcggagagccccgc t tcatcgcag tgggcta  
cgtggacgacacgcag t tgc tgcag t tgcacagcgacgccgcgag tccaagaggggagccgcggcgccgtgggtg  
25 gagcaggagggggccggag tatl tgggaccgggagacacagaagtacaagcgccaggcacagactgaccgag t gaggc  
tgcggaacctgcgcggctactacaaccagagcgaggccgggtctcacaccc tccagaggatgtatggctgcgacct  
ggggcccgacgggcgcctcc tccgcgggtaaaaccag t tgcctacgacggcaaggattacatcgccctgaatgag

gacctgcgc tcc tggaccgccg cgacacggcggc tccagatcaccagcgcaag tgggaggcgcccg taccggcgg  
agcagc tggagagcc tacc tggagggcacgt tgc tggag tggc tccgcagat acc tggagaac Aggaagaagacgt  
gcagcgcg cggaacacccaaagacacacgt taccacccatcccgt tct taccat taggccaccc tagg tgc tgg  
gccc tgggt tct tacc tgcggagatcacac tacc tggcagcg gga tggcgaggaccaa ac taggacaccgagc  
5 t tggagaccaggccagcaggagat tgaac t tccagaag tgggcagc t tgg tgg tggc t tcc tggagaagagca  
gagatcacgt tggca t tgcagcacgaggggc tggcagagcccc tacc tggat tggggccat t tcccagccc  
accatccccatcgt tggcatcgt tgc tggcc tggc t tcc tggc t tcc tggc t tcc tggc t tcc tggc t tcc tggc t tcc  
t tggat t tggat tggaggaagagc t cagg tggaaaaggaggagc tgc t tccaggt tgc t tccagcaacag t gcca  
gggt t cga t gagt t c t c t cgt t gtaa (SEQ ID NO:83);

## 10 Cw\*0804 :

gtccccac tccatgaggat t tctacacggccgt t tccggcccgccg cgagagccccgt t tccatcgcag tggg  
ctacgt tggacgacacgcag t tgc tgcag t tgcacagcgacggcgag tccaagaggggagccg cggcgccgt tgg  
tgggagcaggagggg cggagat t tggaccgggagacacagaag tacaagcgccaggc acagac taccgag tga  
gccc tgcggaac c tgcgcggc t tcc tacaaccagagcgaggccggg t tccacaccc tccagaggat tga tggc tgcga  
15 cc tggggccc gacgggcgcc tcc tccgcggt taaaccag t tgcctacgacggcaaggat t taccatcggcc tgaat  
gaggacc tgcgt tcc tggaccgccg cggaac Aggcggc tccagatcaccagcgcaag tgggaggcgcccg tggg  
cggagcagc Tgagagcc tacc tggagggcacgt tgc tggag tggc tccgcagat acc tggagaacgggaag Aagac  
gt tgcagcgcgcg (SEQ ID NO:84);

## Cw\*0805 :

gtccccac tccatgaggat t tctacacggccgt t tccggcccgccg cgagagccccgt t tccatcgcag tggg  
ctacgt tggacgacacgcag t tgc tgcag t tgcacagcgacggcgag tccaagaggggagccg cggcgccgt tgg  
tgggagcaggagggg cggagat t tggaccgggagacacagaag tacaagcgccaggc acagc taccgag tga  
gccc tgcggaac c tgcgcggc t tcc tacaaccagagcgaggccggg t tccacaccc tccagaggat tga tggc tgcga  
20 cc tggggccc gacgggcgcc tcc tccgcggt taaaccag t tgcctacgacggcaaggat t taccatcggcc tgaat  
gaggacc tgcgt tcc tggaccgccg cggaac Aggcggc tccagatcaccagcgcaag tgggaggcgcccg tggg  
cggagcagc Tgagagcc tacc tggagggcacgt tgc tggag tggc tccgcagat acc tggagaacgggaag Aagac  
gt tgcagcgcgcg (SEQ ID NO:85);

Cw\*0806 :

gctccac tccatgaggat t tctacaccgccgtg tccggcccgccgaggagccccgc t tca tgcag tggg  
ctacgtggacgacacgcag t tctg tgcag t tgcacagcgacgccgag tccaagaggggagccg cgggcgccgtgg  
gtggagcaggaggggcccggag t t tggaccgggagacacagaagtacaagcgccaggcacagac t gaccgag tga  
5 gcc tgcggaacctg cgcggc t actacaaccagagcgaggccgggtc t tca cacc tccagaggatgtatggc tgcga  
cc tggggcccgcgggcgc t tcc tccg cgggtat aaccag t tgcctacgacggcaaggat taca tgcct tgaat  
gaggacctg cgt tcc tggaccgccgaggacacggcggtc agat caccagcgcaagt tggaggcgccccgtacgg  
cggagcagc t gtagcc t acc tggagggcGcgtgcgtggagtggc tccgcagat acc tggagaacAggaagaagac  
gctgcagcgcgcg (SEQ ID NO:86);

10 Cw\*0807 :

gctccac tccatgaggat t tctacaccgccgtg tccggcccgccgaggagccccgc t tca tgcag tggg  
ctacgtggacgacacgcag t tctg tgcag t tgcacagcgacgccgag tccaagaggggagccg cgggcgccgtgg  
gtggagcaggaggggcccggag t t tggaccgggagacacagaagtacaagcgccaggcacagac t gaccgag tga  
gcc tgcggaacctg cgcggc t actacaaccagagcgaggccgggtc t tca cacc tccagaggatgtatggc tgcga  
15 cc tggggcccgcgggcgc t tcc tccg cgggtat aaccag t tgcctacgacggcaaggat taca tgcct tgaat  
gaggacctg cgt tcc tggaccgccgaggacaAggcggc t agat caccagcgcaagt Tggaggcgccccgtgagg  
cggagcagcgagagcc t acc tggagggcacgtgcgtggagtggc tccgcagat acc tggagaacgggaagAagac  
gctgcagcgcgcg (SEQ ID NO:87);

Cw\*0808 :

20 gctccac tccatgaggat t tctacaccgccgtg tccggcccgccgaggagccccgc t tca tgcag tggg  
ctacgtggacgacacgcag t tctg tgcag t tgcacagcgacgccgag tccaagaggggagccg cgggcgccgtgg  
gtggagcaggaggggcccggag t t tggaccgggagacacagaagtacaagcgccaggcacagac t gaccgag tga  
gcc tgcggaacctg cgcggc t actacaaccagagcgaggccgggtc t tca cacc tccagagCatgtatggc tgcga  
cc tggggcccgcgggcgc t tcc tccg cgggtat aaccag t tgcctacgacggcaaggat taca tgcct tgaat  
25 gaggacctg cgt tcc tggaccgccgaggacacggcggtc agat caccagcgcaagt tggaggcgccccgtacgg  
cggagcagc t gtagcc t acc tggagggcacgtgcgtggagtggc tccgcagat acc tggagaacgggaagAagac  
gctgcagcgcgcg (SEQ ID NO:88);

Cw\*0809 :

a t g c g g g t c a t g g c g c c c g a a c c c t c a c c c t g c t g c t c t c g g g a g c c c t g g c c c t g a c c g a g a c c t g g g c c t g c t  
c c c a c t c c a t g a g g t a t t t c t a c a c c g c c g t g t c c c g g c c c g g c c g g a g a g c c c c g t t c a t c g c a g t g g g c t a  
c g t g g a c g a c a c g c a g t t c g t g c a g t t c g a c a g c g a c g c c g c g a g t c c a a g a g g g g a g c c g c g g g c g c c g t g g g t g  
5 g a g c a g g a g g g g c c g g a g t a t t g g g a c c g g g a g a c a c a g a a g t a c a a g c g c c a g g c a c a g a c t g a c c g a g t g a g c c  
t g c g g a a c c t g c g c g g c t a c t a c a a c c a g a g c g a g g c c g g g t c t c a c a c c c t c c a g a g g a t g t a t g g c t g c g a c c t  
g g g g c c c g a c g g g c g c c t c c t c c g c g g g t a t g a c c a g t c c g c c t a c g a c g g c a a g g a t t a c a t c g c c c t g a a t g a g  
g a c c t g c g c t c c t g g a c c g c c g g a c a c g g c g g c t c a g a t c a c c c a g c g c a a g t g g g a g g c g g c c c g t a c g g c g g  
a g c a g c t g a g a g c c t a c c t g g a g g g c a c g t g c g t g g a g t g g c t c c g c a g a t a c c t g g a g a a c g g g G a g a a g a c g c t  
10 g c a g c g c g c g g a a c a c c c a a g a c a c a c g t g a c c c a c c a t c c c g t c t c t g a c c a t g a g g c c a c c c t g a g g t g c t g g  
g c c (SEQ ID NO:89);

Cw\*120201 :

a t g c g g g t c a t g g c g c c c g a a c c c t c a t c c t g c t g c t c t c g g g a g c c c t g g c c c t g a c c g a g a c c t g g g c c t g c t  
c c c a c t c c a t g a g g t a t t t c t a c a c c g c c g t g t c c c g g c c c g g c c g g a g a g c c c c g t t c a t c g c a g t g g g c t a  
15 c g t g g a c g a c a c g c a g t t c g t g c g g t t c g a c a g c g a c g c c g c g a g t c c a a g a g g g g a g c c g c g g g c g c c g t g g g t g  
g a g c a g g a g g g g c c g g a g t a t t g g g a c c g g g a g a c a c a g a a g t a c a a g c g c c a g g c a c a g g c t g a c c g a g t g a g c c  
t g c g g a a c c t g c g c g g c t a c t a c a a c c a g a g c g a g g c c g g g t c t c a c a c c c t c c a g a g g a t g t a C g g c t g c g a c c t  
g g g g c c c g a c g g g c g c c t c c t c c g c g g g t a t g a c c a g t c c g c c t a c g a c g g c a a g g a t t a c a t c g c c c t g a a c g a g  
g a c c t g c g c t c c t g g a c c g t g c g g a c a c g g c g g c t c a g a t c a c c c a g c g c a a g t g g g a g g c g g c c c g t g a g g c g g  
20 a g c a g t g g a g a g c c t a c c t g g a g g g c a c g t g c g t g g a g t g g c t c c g c a g a t a c c t g g a g a a c g g g a a g g a g a c g c t  
g c a g c g c g c g g a a c a c c c a a a g a c a c a c g t g a c c c a c c a t c c c g t c t c t g a c c a t g a g g c c a c c c t g a g g t g c t g g  
g c c c t g g g c t t c t a c c c t g c g g a g a t c a c a c t g a c c t g g c a g c g g g a t g g c g a g g a c c a a a c t c a g g a c a c c g a g c  
t t g t g g a g a c c a g g c c a g c a g g a g a t g g a a c c t t c c a g a a g t g g g c a g c t g t g g t g g t g c c t t c t g g a g a a g a g c a  
g a g a t a c a c g t g c c a t g t g c a g c a c g a g g g g c t g c c g g a g c c c c t a c c c t g a g a t g g g a g c c a t c t t c c c a g c c c  
25 a c c a t c c c c a t c g t g g g c a t c g t t g c t g g c c t g g c t g t c c t g g c t g t c c t a g c t g t c c t a g g a g c t g t g A t g g c t g  
t t g t g a t g t g t a g g a g g a a g a g c t c a g g t g g a a a a g g a g g g a g c t g c t c t c a g g c t g c g t c c a g c a a c a g t g c c c a  
g g g c t c t g a t g a g t c t c t c a t c g c t t g t a a (SEQ ID NO:90);



Cw#120202 :

aigcgggicalggcggccgaacccicalccigcigciccgaggagccigggccigaccgagaccigggccigc  
cccaciccagagglaatticacaccgcccigicccggccggcgaggagccccgcitcagcagigggc  
cgtggacgacacgcagtcgicgggtcgacagcgacccgcgagccaagaggggagccgcccggcgccgigggig  
5 gagcaggagggggccggaglaigggaccgggagacacagaaglaaagcggcaggcacaggcigaccgagigagcc  
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agcagtgagagccatccigggaggcacgicgigggagiggtccgcagataccigggagaacgggaaggagacgcl  
10 gcagcgcggaacacccaaagacacacgigaccacccatcccgicicagcatgaggccacccigaggigciggg  
gcccigggccttccacccigcggagatcacacigacciggcagcgggatggcgaggaccaaactcaggacaccgagc  
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gagatcacgtgccatgtgcagcacgagggcggtgccAgagccctcaccigagatgggagccaicctccagccc  
accatcccatcgtgggcacgtgtcigggciggtgtcciggtgtccagcgtcctaggagcigtAlggcig  
15 tligtgatgigtaggaggaagagcicaggigggaaaaggaggagcigcicagggcigcgtccagcaacagtgccca  
gggctcgtatgagtcctcctcgtctgtaa (SEQ ID NO:91);

Cw#120203 :

gcicccaciccagagglaatticacaccgcccigicccggccggcgaggagccccgcitcagcagiggg  
ctacgtggacgacacgcagtcgicgggtcgacagcgacccgcgagccaagaggggagccgcccggcgccgtgg  
20 gaggagcaggagggggccggaglaigggaccgggagacacagaaglaaagcggcaggcacaggcigaccgagiga  
gccigcggaaaccigcggcgtacacaaaccagagcgaggccgggticacacccicagaggatgAlggcigcga  
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gaggaccigcgtccigggaccgTgcggacacggcggtcagatcaccagcgcaagigggagggcccgigagg  
cggagcaglggagagccatccigggaggcacgicgigggagiggtccgcagataccigggagaacgggaaggagac  
25 gctgcagcgcgcg (SEQ ID NO:92);

Cw#120301 :

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cg|t|gg|ac|g|ac|ac|gc|ag|t|c|g|t|gc|gg|t|c|g|ac|ag|c|g|ac|c|c|c|g|c|g|at|c|c|a|ag|ag|gg|g|ag|c|c|g|c|gg|g|c|c|g|t|gg|t|g|  
g|ag|c|ag|g|ag|gg|g|c|c|g|g|at|t|gg|g|ac|c|gg|g|ag|ac|ac|aga|ag|t|a|c|a|ag|c|c|c|ag|g|c|ac|ag|G|c|t|g|ac|c|g|ag|t|g|ag|c|c|  
t|g|c|g|ga|acc|t|g|c|g|c|gg|c|t|a|c|t|a|c|acc|ag|ag|c|g|ag|g|c|c|gg|g|t|c|t|c|ac|acc|t|c|c|ag|t|gg|at|g|t|at|gg|t|g|c|g|ac|c|t|  
5 g|gg|g|c|c|c|g|ac|gg|g|c|g|c|t|c|c|t|c|c|g|c|gg|g|t|at|g|acc|ag|t|c|c|g|c|t|ac|g|ac|gg|c|a|agg|at|t|a|c|t|c|g|c|c|t|g|a|ac|g|ag|  
g|acc|t|g|c|g|c|t|c|c|t|gg|ac|T|g|c|c|g|c|gg|ac|ac|gg|c|gg|c|t|c|ag|at|c|acc|ac|g|c|g|c|a|ag|t|gg|g|ag|g|c|gg|c|c|g|t|g|ag|g|c|g|g|  
a|g|c|ag|t|g|g|ag|ag|c|t|acc|t|g|g|ag|gg|c|ac|g|t|g|c|g|t|gg|ag|t|gg|t|c|c|g|c|ag|at|acc|t|g|g|aga|ac|gg|ga|agg|ag|ac|g|c|t|  
g|c|ag|c|g|c|g|c|g|ga|ac|acc|caa|ag|ac|ac|ac|g|t|g|ac|c|c|ac|c|at|c|c|c|g|t|c|t|g|ac|c|at|g|agg|c|c|ac|c|t|g|agg|t|g|c|t|g|g|  
g|c|c|c|t|gg|g|c|t|t|c|t|acc|t|g|c|g|g|ag|at|c|ac|ac|t|g|acc|t|g|g|c|ag|c|gg|ga|t|gg|c|g|agg|ac|c|aa|ac|t|c|agg|ac|acc|g|ag|c|  
10 t|t|g|t|gg|ag|acc|agg|c|c|ag|c|agg|ag|at|t|g|ga|acc|t|t|c|c|aga|ag|t|gg|g|c|ag|c|t|g|t|g|t|gg|t|g|c|t|t|c|t|g|g|aga|ag|ag|c|a|  
g|ag|at|ac|ac|g|t|g|c|c|at|g|t|g|c|ag|c|ac|g|ag|gg|g|c|t|g|c|c|ag|ag|c|c|c|t|c|ac|c|t|g|aga|t|gg|g|ag|c|c|at|c|t|c|c|c|ag|c|c|  
a|c|c|at|c|c|c|at|c|g|t|gg|g|c|at|c|g|t|g|c|t|gg|c|t|gg|c|t|g|t|c|t|gg|c|t|g|t|c|t|agg|ag|c|t|g|t|At|gg|t|g|  
t|t|g|t|at|g|t|g|t|agg|ag|ga|ag|ag|c|t|c|agg|t|gg|aaa|agg|ag|gg|ag|c|t|g|c|t|c|c|agg|c|t|g|c|t|c|c|ag|c|a|ac|ag|t|g|c|c|c|a|  
gg|g|c|t|c|t|g|at|g|ag|t|c|t|c|t|c|at|c|g|c|t|t|g|t|aa (SEQ ID NO:93);

15 Cw\*120302 :  
gctccacatccatgaggtatttctacaccgccgtgtccggccccggccgcggagagccccgcttcatcgcagtgagg  
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gtggagcaggaggggcccggagttatgggaccgggagacacagaagtacaagcgccaggcacaggctgaccgagttga  
gccgtgcggaacctgcgcggctactacaaccagagcgaggccgggtctcacacctccagtggaatgtaggctgcga  
20 ccggggcccgacgggcgcttccgccgggtatgaccagtcgcctacgacggcaaggattacatcgccctgaac  
gaggacctgcgctccggaccgcGcgggacacggcggctcagatcaccagcgcaagtgaggaggcggcccgtagg  
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CW#120401 :

25 atgctgggtcattggcgccccgaacccatccatgctgctcgggagccclggcccagaccgagaccctgggctgct  
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gagcaggaggggcccggagtatlgggaccgggagacacagaaglacaaagcgcaggcacagGctgaccgaglgaacc  
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gacctgcgctccctggaccgcccgggacacGgcggctcagatcaccagcgcaaglgggaggcgcccgctgaggcgg  
5 agcagTggagagccctaccctggagggcacgtgcgtggagtggtccgcagataccctggagaacgggaaggagacgct  
gcagcgcgcggaacacccaaagacacacgtgaccacacatcccgctctctgaccatgaggccacccctgaggctgc (SE  
Q ID NO:95);

Cw\*120402 :

atgcgggtcalggcgccccgaacccctcaatccctgcctgcctcgggagccccggccccgaccgagaccctgggctgct  
10 cccactccatgaggatattctacaccgcccgtgctccggccccggcgaggagccccgcttcaatcgagctgggctta  
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15 gacctgcgctccctggacTgccgcccggacacggcggtcagatcaccagcgcaaglgggaggcgcccgctgaggcgg  
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tctggagaccaggccagcaggagatggaacctctcagaagtgggcagctgtgggtggctgctctggagaagagca  
20 gagatacacgtgccatgtgcagcacgaggggtgccagagccccctacccctgagatgggagccatctctccagccc  
accatccccatcgtgggcatcgtgctggcctggctgctcctagctgctcctaggagctgtgAlggctg  
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gggctctgtagtctctcctcgtctgtaa (SEQ ID NO:96);

Cw\*1205 :

25 atgcgggtcalggcgccccgaacccctcaatccctgcctgcctcgggagccccggccccgaccgagaccctgggctgct  
cccactccatgaggatattctacaccgcccgtgctccggccccggcgaggagccccgcttcaatcgagctgggctta  
cgctggacgacacgcagctcgtgcggctcgacagcgacgcccgcgagtcgaagaggggagccgcggggcgccgtgggtg

gagcaggaggggcccggagtal tgggaccgggagacacagaaglacaaagccaggcacagac taccgag tgaacc  
tgcggaaAc tgcgcggc taccacaaccagagcgaggccgggtc tccacaccc tccag tggatgtatggc tgcgacct  
ggggcccgcacgggcgcctcc tccgcgggtatgaccag tccgcctacgaçggcaaggat taca tgcctc tgaacgag  
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5 agcag tggagagcc tacc tggagggcacgtgcgtggagtggc tccgcagat acc tggagaacgggaaggagacgc t  
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gccc tgggt tct tacc tgcggagatcacac tacc tggcagcgggatggcaggaccacaaac tgggacacccgagc  
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gagatcacgtgccatgtgcagcacgaggggc tggcagagccctcacc tggatgggagcca tctccagccc  
10 accatccca tctgtggcatcgt tgc tggc tggc tgc tcc tggc tgc tcc tagc tgc tcc taggagc tgc tggc tgc  
t tgtgatgtatggaggaagagc tgggtggaaaaggaggagc tgc tctcaggc tgc tccagcaacag tgc cca  
gggtctgatgag tctc tcatcgt tgtaa (SEQ ID NO:97);

Cw#1206 :

gctcccatccatgaggtat tctacaccgccgtg tccggcccggccggagagccccgc tcatcgcag tggg  
15 ctacgtggacgacacgcag tctgtgcgt tgcagacgcagccgcgag tccaagaggggagccgcgggcgcctgg  
gtggagcaggagggcccggagtal tgggaccgggagacacagaaglacaaagccaggcacaggc taccgag tga  
gcctgcggaacctgcgcggc taccacaaccagagcgaggccgggtc tccacaccc tccag tggatgtatggc tgcga  
cc tggggcccgcacgggcgcctcc tccgcgggtatgaccag tccgcctacgacgTcaaggat taca tgcctc tgaac  
gaggacctgcgc tcc tggac tccgcggacacggcggc tcatatcaccagcgcaag tgggaggcggcccg tggg  
20 cggagcag tggagagcc tacc tggagggcacgtgcgtggagtggc tccgcagat acc tggagaacgggaaggagac  
gc tgcagcgcgcgg (SEQ ID NO:98);

Cw#1207 :

gctcccatccatgaggtat tctacaccgccgtg tccggcccggccggagagccccgc tcatcgcag tggg  
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25 gtggagcaggagggcccggagtal tgggaccgggagacacagaaglacaaagccaggcacaggc taccgag tG  
gcctgcggaacctgcgcggc taccacaaccagagcgaggccgggtc tccacaccc tccag tggatgtatggc tgcga  
cc tggggcccgcacgggcgcctcc tccgcgggtatgaccag tccgcctacgacggcaaggat taca tgcctc tgaac

gaggaccitgcgtccitggacitgccgaggacacggcggcicagatcaccagcgcaagiggaggcggcccgtagg  
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Cw#1208 :

5 atgcgggicaitggcggccgaacccitacitcgtgcitcgggagcccitggccitgaccgagacctgggctgct  
cccacttccaitgaggtaittctacaccgctgttccggccggcgcggagagccccgtitcaltgcagtagggctia  
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10 gggggccgacggcgccitctccgcgggtaitgaccagtcggctacgacggcaaggaitacatcgccitgaacgag  
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15 tigtggagaccaggccagcaggagaitggaaccttcagaagtgggcagctgttggtggctctctggagaagagca  
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acctccccatcgtgggcatcgttgcitggctggctgttccitggctgttctagctgtcttaggagctgtgAitggctg  
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gggctctgatgagctctctcatcgcttgttaa(SEQ ID NO:100);

20 Cw#140201 :

atgcgggicaitggcggccgaacccitacitcgtgcitcgggagcccitggccitgaccgagacctgggctgct  
cccacttccaitgaggtaittctCcacatccgtgttccggccggcgcgggagccccgtitcaltgcagtagggctia  
cgtggagcagacgcagtitcgtgcgttcgacagcgacgccgcgagttccgagaggggagccgcggcgccgtgggtg  
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25 tgcgaacctgcgcggctactacaaccagagcgaggccgggtctcacacctccagtaggaitgtitggctgcgacct  
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Cw\*140202 :

10 gctcccatccatgaggtatttctCcacatccgtgtccggccccggcggggagccccgttcatcgcagtggg  
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15 gaggacctgcgtctctggaccgcccgacacggcggtcagatcacccagcgcaagtgaggagggggccgtgagg  
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Cw\*1403 :

atgcgggcataggccccgaacctcatctgtgtctcgggagcccggccctgaccgagacctgggctgtct  
20 cccactccatgaggtatttctCcacatccgtgtccggccccggcggggagccccacttcatcgcagtgggtta  
cgtggacgacacgcagttcgtgcggttcgacagcgaccccgagttccAagaggggagccgcggcgccgtgggtg  
gagcaggagggggccggaglatgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagttagcc  
tgccgaacctgtcgggctactacaaccagagcgaggccgggtctcacacctccagtggaagtgtgtgtgtgtgt  
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25 gatctgcgtctctggaccgcccgacacggcggtcagatcacccagcgcaagtgaggagggggccgtgaggcgg  
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gcccTgggcTtTaccctTgcggagatTcacacTgacctTggcagTgggaTggggaggaccTaaacTcaggacaccgagc  
TtTtgTgagaccaggccagcaggagatTggaacctTccagaagTgggcagcTgtTgTggTgctTtTcggagaagagca  
gagatacacgTgccatTgtcagcacgaggggTgcccggagccccTcacccTgagatTgggagccgTctTcccagccc  
accatTccccatTcgTgggcatTcgtTgctTggccTggcTgtTccTggcTgtTccTtagcTgtTccTtaggagcTgtTggTggcTg  
5 TtTgtatTgtTtaggaggaagagcTcaggTggaaaaggaggagcTgtTctTcaggcTgcTgtTccagcaacagTgcccc  
gggcTctTgatTgagTctTctTcatTcgctTgtTaa (SEQ ID NO:103);

Cw\*1404 :

gctTcccacTccatTgaggtatTtTctTccacatTccgtTgtTcccggccccggccgTggggagccccgTtTcatTcgagTggg  
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10 gTggagcaggaggggTccgTgagTatTgggaccgggagacacagaagTacaagcgccaggccacagcTgaccgagTga  
AccTgcggaacctTgcgTggctTactTacaaccagagcgaggccgggTctTcacacccTccagTggatTgtTggcTgcga  
ccTggggcccgacgggTgcccTctTccgTgggTatTgaccagTcTgcctTacgacggcaaggatTacatTgccccTgaac  
gaggaTctTgcgTctTggaccgTccgTggacacggcggcTcagatTaccagcgcaagTgggagggcgcccgTgagg  
cgagcagcgagagccTaccTggagggcacgTgcTgTgagTggcTccgTcagatTaccTggagaacgggaaggagac  
15 gctTgcagcgcgTgg (SEQ ID NO:104);

Cw\*1405 :

gctTcccacTccatTgaggtatTtTctTccacatTccgtTgtTcccggccccggccgTggggagccccgTtTcatTcgagTggg  
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20 gTggagcaggaggggTccgTgagTatTgggaccgggagacacagaagTacaagcgccaggccacagcTgaccgagTga  
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ccTggggcccgacgggTgcccTctTccgTgggTatTgaccagTcTgcctTacgacggcaaggatTacatTgccccTgaac  
gaggaTctTgcgTctTggaccgTccgTggacacggcggcTcagatTaccagcgcaagTgggagggcgcccgTgagg  
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gctTgcagcgcgTgg (SEQ ID NO:105);

25 Cw\*150201 :

atTggggTcatTggcTccccgaacctTctTctTgtTgtTctTcgggagccccTggcccTgaccgagacctTggccTgct  
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cgtaggacgacacgcagtcgtagcggttcgacagcgacgccgcgagtcgaagaggggagccgcgggcgcgcgtgggtg  
gagcaggagggggccggagtaattgggaccgggagacacagaactacaagcgccaggcacagacagaccgagtagaacc  
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10 gagatcacgtgccatgtgcagcacgaggggtcccgagccccctacctgagatgggagccatctctccagccc  
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Cw\*150202 :

15 gctcccatlccatgaggtaattctacaccgctgtgtcccgcccgccgcggagagccccActlcatcgagtaggg  
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gtggagcaggagggggccggagtaattgggaccgggagacacagaaCtacaagcgccaggcacagacagaccgagtaga  
acctgcggaaActgcgcggctactacaaccagagcgaggccgggttcacatcattccagaggatgtagtggttcgga  
cctggggcccgacgggcgcctccctccgctgggCatgaccagtagcctacgacggcaaggattacatcgccctgaac  
20 gaggacctgcgcctcctggaccgcccgggacacggcggctcagatcaccagcgcaagtgggaggcgggccgtgagg  
cggagcagctgagagacctaccaggaggcacgtgcgtggagtggtccgcagataccaggagaacgggaaggagac  
gctgcagcgcgcg (SEQ ID NO:107);

Cw\*1503 :

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25 cccactccatgaggtaattctacaccgctgtgtcccgcccgccgcggagagccccactlcatcgagtagggctta  
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gacctgcgctccggaccgccgagacacggcggctcagatcaccagcgcaagtgaggaggcgcccgtaggagg  
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5 gcagcgcgcggaacacccaaagacacacgtgaccacacatcccgctcttgaccatgaggccacccagaggctgg  
gcccgggctctaccccgcgagatcacactgacctggcagcgggatggcgaggaccacacacaggacaccgagc  
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accatccccatcgtgggcatcgtgtcgtggctggctgtcctggctgtcctagctgtcctaggagctgtAtggctg  
10 tltgtatgtltaggaggaagagctcaggltgaaaaggaggagctgtctcaggctgcgtccagcaacagtgccca  
gggctctgatgagctctcatcgctgttaa (SEQ ID NO:108);

Cw\*1504 :

algcgggtcatggcgccccgaacctccctcctgtcgtctcgggagccccggccccgaccgagacctgggctgtc  
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15 cgtggacgacacgcagttcgtgcggtcgacagcgacgccgcgagtcgaagaggggagccgcggcgccgtgggtg  
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20 agcagctgagagccaccggagggcacgtgcgtggagtggtccgcagataccggagaacgggaaggagacgt  
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tltggagaccaggccagcaggagatggaacctccagaagtgggcagctgtgggtggctcttgagaagagca  
gagatcacgtgccatgtgcagcacgaggggtgccggagccccaccccgagatgggagccatctccagccc  
25 accatccccatcgtgggcatcgtgtcgtggctggctgtcctggctgtcctagctgtcctaggagctgtAtggctg  
tltgtatgtltaggaggaagagctcaggltgaaaaggaggagctgtctcaggctgcgtccagcaacagtgccca  
gggctctgatgagctctcatcgctgttaa (SEQ ID NO:109);

CW#150501 :

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cgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagttcaagaggggagcccgcgggcgccgtgggtg  
5 gaggcaggagggggccggagttatgggaccgggagacacagaactacaagcgccaggcacagactgaccgagtgaacc  
tgcggaaactgcgcggctactacaaccagagcgaggccgggtctcacatcatccagaggatgtatggctgcgacct  
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agcagctgagagcctaccctggagggcacgtgctggtgagtggtccgcagataccctggagaacgggaaggagacgct  
10 gcagcgcgcggaacacccaaagacacagtgaccaccatcccgtctctgaccatgaggccacctlgaggtgctgg  
gcccctgggcttctacccctgcggagatcacactgacctggcagcgggatggcgaggaccacaaactcaggacaccgagc  
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15 ttgtgtgtgttaggaggaagagctcaggctggaaaaggaggaggctgctctcaggctgctgtccagcaacagtgccca  
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CW#150502 :

atgcgggtcattggcgccccgaacccctccctcctgctcgtcgtcctcgggagcccaggccctgaccgagaccaggccctgctc  
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20 cgtggacgacacgcagttcgtcgggtcgtacagcgacgccgcgagttcaagaggggagccgcgggcgccgtgggtg  
gagcaggagggggccggagtaaggggaccgggagacacagaactacaagcgccaggcacagactgaccgagtgaa  
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gacctgcgctcttggaccgcccgggacacggcggctcagatcaccagcgcaagtgggaggcgggccgtgaggcgg  
25 agcagctgagagcctaccaggaggcacgtgcgtggagtggtccgcagataccaggagaacgggaaggagacgt  
gcagcgcgcggaacacccaaagacacagtgaccaccaatcccgtctcigaccaagggccacctgaggctgcagg  
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ttgtggagaccaggccagcaggagatggaaccttccagaagtgggcagctgtgggtggcttctggagaagagca  
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ttgtgatgtgtaggaggaagagctcaggltggaaggaggaggagctgtctcaggctgtcgtccagcaacagtgccca  
5 gggctctgatgagtcctcctatcgcttgtaa (SEQ ID NO:111);

Cw#1506 :

atgcgggcatggcggcccgaaacctctctctgtctgtctcgggagcccctggcccctgaccgagacctgggcccgtct  
cccactccatgaggtatctctacaccgtgtgtctccggcccgcccgagagagccccacttcaatcgagtgggcta  
cgtggagcagacgcagttcgtgcggttcgacagcgaccccgagttcaagaggggagcccgggcgccgtgggtg  
10 gagcaggagggggccggagtattgggaccgggagacacagaactacaagcgccaggcacagactgaccgagtgaacc  
tgcggaacctgcgcggctactacaaccagagcgaggccgggtctcacaatcctcagaggatgtatggctgcgacct  
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gacctgcgtctctggaccgcccggacacggcggtcagatcaccagcgcaagltgggaggcgcccggtgaggcgg  
agcagctgagagcctacctggagggcacgttcgtggagtggctccgcagatacctggagaacgggaaggagacgct  
15 gcagcgcgcggaacacccaaagacacacgtgacctaccatctccgtctctgacctgaggccacctgaggltgtgg  
gcccctgggtctctacctgcggagatcacactgacctggcagcgggatggcgaggaccaaactcaggacaccgagc  
ttgtggagaccaggccagcaggagatggaaccttccagaagtgggcagctgtgggtggcttctggagaagagca  
gagatcacgtgccatgtgcagcacgaggggctgccggagccccctacccctgagatgggagccaatcttccagccc  
accatccccatcgtgggcatcgttgcctggcctggctgtccctggctgtccctagctgtccctaggagctgtgAtggctg  
20 ttgtgatgtgtaggaggaagagctcag (SEQ ID NO:112);

Cw#1507 :

gtctccactccatgaggtatctctacaccgtgtgtctccggcccgcccgagagagccccActtcaatcgagtgagg  
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gtggagcaggagggggccggagtattgggaccgggagacacagaaCtacaagcgccaggcacagactgaccgagtga  
25 gccctgcggaacctgcgcggctactacaaccagagcgaggccgggtctcacaatcctcagaggatgtatggctgcga  
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gaggacctgcgtctctggaccgcccggacacggcggtcagatcaccagcgcaagltgggaggcgcccggtgagg

cggagcagcTgagagccIaccIggagggcacgIgcgIggagIggcIccgcagataccIggagaacgggaaggagac  
gcIgcagcgcgcgg (SEQ ID NO:113);

Cw\*1508 :

gcIcccacIccatIaggtatIctIacaccgcIgtIgccggcccgccgcggagagccccActIcaIcgcagIggg  
5 ctacIggacgacacgcagIcgtIcggtIcgacagcgacgccgcgagIccaagaggggagccgcggcgccgIgg  
gtggagcaggagggggccggagIatIgggaccgggagacacagaaCtacaagcgccaggcacagactIaccgagIga  
accIgcggaaActIgcgcggcIactIacaaccagagcgaggccgggIctIcacaIcaIccagaggatgtatIggcIgcga  
ccIggggcccgacgggcgccIccIccgcgggCatIaccagIAGcctIacgacggcaaggatIacatcgccctgaac  
gaggaccIgcgcIccIggaccgccgcggacacggcggtIcagatIaccagcgcaagIgggaggcgcccgIgagg  
10 cggagcagcggagagccIaccIggagggcacgIgcgIggagIggcIccgcagataccIggagaacgggaaggagac  
gcIgcagcgcgcgg (SEQ ID NO:114);

Cw\*1509 :

gcIcccacIccatIaggtatIctIacaccgcIgtIgccggcccgccgcggagagccccactIcaIcgcagIggg  
ctacIggacgacacgcagIcgtIcggtIcgacagcgacgccgcgagIccaagaggggagccgcggcgccgIgg  
15 gtggagcaggagggggccggagIatIgggaccgggagacacagaacIacaagcgccaggcacagactIaccgagIga  
accIgcggaaactIgcgcggcIactIacaaccagagcgaggccgggIctIcacaIcaIccagaggatgtatIggcIgcga  
ccIggggcccgacgggcgccIccIccgcgggCatIaccagICgcctIacgacggcaaggatIacatcgccctgaac  
gaggaccIgcgcIccIggaccgccgcggacacggcggtIcagatIaccagcgcaagIgggaggcgcccgIgagg  
cggagcagcTgagagccIaccIggagggcacgIgcgIggagIggcIccgcagataccIggagaacgggaaggagac  
20 gcIgcagcgcgcgg (SEQ ID NO:115);

Cw\*1510 :

gcIcccacIccatIaggtatIctIacaccgccgIgtIccggcccgccgcggagagccccgcIcaIcgcagIggg  
ctacIggacgacacgcagIcgtIcggtIcgacagcgacgccgcgagIccaagaggggagccgcggcgccgIgg  
gtggagcaggagggggccggagIatIgggaccgggagacacagaaCtacaagcgccaggcacagactIaccgagIga  
25 accIgcggaaActIgcgcggcIactIacaaccagagcgaggccgggIctIcacaIcaIccagaggatgtatIggcIgcga  
ccIggggcccgacgggcgccIccIccgcgggCatIaccagIAGcctIacgacggcaaggatIacatcgccctgaac  
gaggaccIgcgcIccIggaccgccgcggacacggcggtIcagatIaccagcgcaagIgggaggcgcccgIgagg

cggagcagcTgagagcctaccTggagggcacgtgcgtggagTggctccgcagataccTggagaacgggaaggagac  
gctgcagcgcgcgg (SEQ ID NO:116);

Cw#1511 :

gctcccatccaTgaggtatttctacaccgcTgTgTccggcccAgccgcggagagccccActTcatcgcagTggg  
5 cTactTggacgacacgcagTtcgtgcggTtcgacagcgacgccgcgagTccaagaggggagccgcgggcgcctTgg  
gTggagcaggagggggccggagTatTgggaccgggagacacagaagTacaagcgccaggcacagacTgaccgagTga  
accTgcggaaActTgcgcggctactacaaccagagcgaggccgggTctcacatcatccagaggatTgTatggctgcga  
ccTggggcccgacgggcgcctccTccgcgggCatgaccagTtAgccTacgacggcaaggatTacatcgccctgaac  
gaggaccTgcgcTccTggaccgccgcggacacggcggcTcagatcaccagcgcaagTgggaggcgcccgTgagg  
10 cggagcagcTgagagcctaccTggagggcacgtgcgtggagTggctccgcagataccTggagaacgggaaggagac  
gctgcagcgcgcgg (SEQ ID NO:117);

Cw#1601 :

atgcgggTcaTggcgccccaacccTcatctcTgTgTctcgggagccctggccctgaccgagaccTgggctTgct  
cccacTccaTgaggtatttctacaccgcTgTgTccggccggccgcggagagccccgcTtcatcgcagTgggcta  
15 cgTggacgacacgcagTtcgtgcggTtcgacagcgacgccgcgagTccaagaggggagccgcgggcgcctTgggTg  
gagcaggagggggccggagTatTgggaccgggagacacagaagTacaagcgccaggcacagacTgaccgagTgagcc  
TgcggaaccTgcgcggctactacaaccagagcgaggccgggTctcacaccTccagTggatTgTatggctgcgacct  
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gaccTgcgcTccTggaccgccgcggacacggcggcTcagatcaccagcgcaagTgggaggcgcccgTgcggcgg  
20 agcagcAgagagcctaccTggagggcacgtgcgtggagTggctccgcagataccTggagaacgggaaggagacgct  
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25 accatccccatcTgggcatcgtTgcTggccTggcTgTcTggcTgTccTgagTgTccTaggagcTgTggTggcTg  
TtTgTatgTgTaggaggaagagcTcaggTggaaaaggaggagcTgctcTcaggcTgcgTccagcaacagTgccc  
gggctcTgatgagTctcTcatcgctTgTaa (SEQ ID NO:118);

Cw\*1602 :

aTgcgggtcaTggcgccccgaacccTcaTccTgctTgcTctTcgggagcccTggcccTgaccgagacctTggccTgct  
cccactTccaTgaggTatTtTctacaccgccgTgtcccgccccggccgTgagagccccgctTcaTcgcaTgggctT  
cgTggacgacacgcagTtcgTgcggTtcgacagcgacgccgTgagTccaagaggggagccgTggcgccgTgggTg  
5 gaggcaggaggggTgggagTatTgggaccgggagacacagaagTacaagcgccaggcacagacTgaccgagTgaacc  
TgcggaaAcTgcgcggctTactacaaccagagcgaggccgggTctTcacacccTccagTggaTgTatggcTgcgacct  
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gacctTgcgcTccTggaccgcccggacacggcgTcagatTaccagcgcaagTgggagggcgcccgTgcggcg  
aggcagcAgagagccTaccTggagggcacgTgcTggagTggcTccgTcagatTaccTggagaacgggaaggagacgct  
10 gcagcgcgTggaacacccaaagacacacgTgaccacacTctTgTctTgacatTgaggccacccTgaggTgcTgg  
gcccTgggctTctTaccTgcggagatTcacacTgacctTggcagcgggatTggcgaggaccaaacTcaggacaccgagc  
TtTgTggagaccaggccagcaggagatTggaacctTccagaagTgggcagcTgtTgTggTgctTctTggagaagagca  
gagatTcacgTgccaTgtTgcagcacaggggTgTccggagccccTaccctTgagatTgggagccaTctTccagccc  
accatTccccatTcgTgggcatTgTgtTggcTggcTgtTccTggcTgtTccTaggTgtTggTggcTg  
15 tTgtTatTgtTgTgagggaagagcTcaggTggaaaaggaggggagcTgctTctTcaggctTgcTccagcaacagTgcccc  
gggctTctTgatTgagTctTcTcaTcgctTgtTaa (SEQ ID NO:119);

Cw\*160401 :

aTgcgggtcaTggcgccccgaacccTcaTccTgctTgcTctTcgggagcccTggcccTgaccgagacctTggccTgct  
cccactTccaTgaggTatTtTctacaccgccgTgtcccgccccggccgTgagagccccgctTcaTcgcaTgggctT  
20 cgTggacgacacgcagTtcgTgcggTtcgacagcgacgccgTgagTccaagaggggagccgTggcgccgTgggTg  
gaggcaggaggggTgggagTatTgggaccgggagacacagaagTacaagcgccaggcacagacTgaccgagTgagcc  
TgcggaacctTgcgcggctTactacaaccagagcgaggccgggTctTcacacccTccagTggaTgTatggcTgcgacct  
ggggcccgacggcgccTccTccgTgggTatTgaccagTccgctTcgcgTgcaaggatTacaTgcccTgaacgag  
gacctTgcgcTccTggaccgcccggacacggcgTcagatTaccagcgcaagTgggagggcgcccgTgcggcg  
25 agcagTggagagccTaccTggagggcacgTgcTggagTggcTccgTcagatTaccTggagaacgggaaggagacgct  
gcagcgcgTggaacacccaaagacacacgTgaccacacTctTgTctTgacatTgaggccacccTgaggTgcTgg  
gcccTgggctTctTaccTgcggagatTcacacTgacctTggcagcgggatTggcgaggaccaaacTcaggacaccgagc

ttgtggagaccaggccagcaggagatggaaccttccagaagtgggcagctgtgggtggccttctggagaagagca  
gagatacacgtgccatgtgcagcacgaggggtgcggagccccaccctgagatgggagccatcttcccagccc  
accatccccatcgiggcatcgltgtcggcctggctgtcctggcgtgtcctagcgttcttaggagctgtgggtggctg  
ttgtTatgtttaggaggaagagctcag(SEQ ID NO:120);

## 5 Cw\*1701 :

atgcgggtcatggcgccccaagcccctcctgtcgtctcgggagccctggccctgatcgagacctgggccggct  
cccacitccatgaggtaattctacaccgctgttccggccccggcgaggagccccgcttcatcgagtggtgta  
cgtggacgacacgcagltcgtgcggttcgacagcgacgcccgcgagtcgagaggggagccgccccgctgggtg  
gagcaggaggggcccggagtaattgggaccgggagacacagaagtaacgcccaggcacaggctgaccgagtgaacc  
10 tgcggaaactgcgcggctactacaaccagagcgaggccggttctcacacatccagaggatgtatggctgcgacct  
ggggcccgacggcgccctcctccgcggtataaccagttcgctacgacggcaaggatlaacatcgccctgaacgag  
gacctgcgtcctggaccgcgcgacacggcggtcagatctccagcgcaagttggaggcgccccgtgaggcgg  
agcagctgagagcctacctggaggcgagtgctggagtggtcctcgcggaataccggagaacgggaaggagacgt  
gcagcgcgcggaacgccccaaagacacacgtgaccacatcccgtctctgaccaagggccacctgagggtgtgg  
15 gcccgtggcttctacccgtcgagatcacacgtgacctggcagcgggatggggaggaccaaactcaggacaccgagc  
ttgtggagaccaggccagcaggagatggaaccttccagaagtgggcagctgtgggtggccttctggacaagaaca  
gagatacacgtgccatgtgcagcacgaggggtgcaggagccctgcacctgagatggaagccgtcttcccagccc  
accatccccaaacttgggcatcglttctggcccagctgtcctggcgtgtcctggcgttcttagcgttcc  
taggagctgtgggtcgtgtgtgataC(SEQ ID NO:121);

## 20 Cw\*1702 :

atgcgggtcatggcgccccaagcccctcctgtcgtctcgggagccctggccctgatcgagacctgggccggct  
cccacitccatgaggtaattctacaccgctgttccggccccggcgaggagccccgcttcatcgagtggtgta  
cgtggacgacacgcagltcgtgcggttcgacagcgacgcccgcgagtcgagaggggagccgccccgctgggtg  
gagcaggaggggcccggagtaattgggaccgggagacacagaagtaacgcccaggcacaggctgaccgagtgaacc  
25 tgcggaaactgcgcggctactacaaccagagcgaggccggttctcacacatccagaggatgtatggctgcgacct  
ggggcccgacggcgccctcctccgcggtataaccagttcgctacgacggcaaggatlaacatcgccctgaacgag  
gacctgcgtcctggaccgcgcgacacggcggtcagatctccagcgcaagttggaggcgccccgtgaggcgg

agcagcigagagcciacctggaggcgagtcgctggagtggtccgcggataccggagaacgggaaggagacgct  
gcagcgcgcggaacgcccagacacacgtagccaccaatcccgctcttgaccaagaggccacccagaggctggtgg  
gcccgggctcttacctgaggagatcacactgacctggcagcgggaaggaggaccacaaactcaggacaccgagc  
tttggagaccaggccagcaggagatggaaccttccagaagtgggcagctgtgggtggctcttggacaagaaca  
5 gagatacacgtgccatgtgcagcacgaggggctgcaggagccctGcaccctgagatgga (SEQ ID NO:122);

Cw#1703:

atgcgggtcatggcgccccagccctccctctgctgctctcgggagccctggccctgacgagacctggAccggct  
cccactccatgaggtaattctacaccgctgtcccgcccgccgcggagagccccgcttcatcgcagtgggctta  
cgtggacgacacgcagltcgtgcggttcgacagcgacgccgcgagtcgagaggggagcccgccggcgccgtgggtg  
10 gaggaggagggcgaggatattgggaccgggagacacagaagtaaaagccaggcacaggctgaccgagtgaaac  
tgcggaaactgcgcggctactacaaccagagcgaggccggtctcacaccaatccagaggatgtatggctgcgacct  
ggggcccgacggcgccctccctccgaggatataaccagltcgccctacgacggcaaggattacatcgccctgaacgag  
gacctgcgtctctggaccgcgccggacacggcggtcagatctccagcgcaagttggaggcgcccgctgaggcgg  
agcagcigagagcciacctggaggcgagtcgctggagtggtccgcggataccggagaacgggaaggagacgct  
15 gcagcgcgcggaacgcccagacacacgtagccaccaatcccgctcttgaccaagaggccacccagaggctggtgg  
gcccgggctcttacctgaggagatcacactgacctggcagcgggaaggaggaccacaaactcaggacaccgagc  
tttggagaccaggccagcaggagatggaaccttccagaagtgggcagctgtgggtggctcttggacaagaaca  
gagatacacgtgccatgtgcagcacgaggggctgcaggagccctGcaccctgagatggaagccgtcttccagccc  
accaatcccaacttgggcatcgttctggcccagctgtctggctgtcttggctgtcttggctgtcttagctgtcc  
20 taggagctgtggtcgtctgtgtgatac (SEQ ID NO:123);

Cw#1801:

atgcgggtcatggcgccccagccctccctctgctgctctcgggagccctggccctgaccgagacctgggctgct  
cccactccatgaggtaattctgacaccgctgtcccgcccgccgcggagagccccgcttcatctcagtgggctta  
cgtggacgacacgcagltcgtgcggttcgacagcgacgccgcgagtcgagaggggagcccgccggcgccgtgggtg  
25 gaggaggagggcgaggatattgggaccgggagacacagaagtaaaagccaggcacaggctgaccgagtgaaac  
tgcggaaactgcgcggctactacaaccagagcgaggacgggtctcacaccctccagaggatgttggctgcgacct  
ggggccggacggcgccctccctccgaggatataaccagltcgccctacgacggcaaggattacatcgccctgaacgag



gatctgcgtccctggaccgccgacacggcggtcagatcaccagcgcaagtgggaggcgcccgtagggcgg  
 agcagcggagagccctaccggaggcacgtgcgtggagtggtccgcagataccggagaacgggaaggagacgt  
 gcagcgcgcggaacacccaaagacacacgtgaccacacatcccgctctgaccaaggccacccagaggctgtgg  
 gcccgggcttctacccggcgagatcacactgacctggcagtggaaggaggaccacaaacaggacaccgagc  
 5 tttggagaccaggccagcaggagatggaacctccagaagtgggcagctgtgggtgtgcttctggagaagagca  
 gagaacacgtgccaatgtgcagcacgaggggtgccggagccccctacccagagatggAagccgtcttccagccc  
 accatccccatcgtgggcatcgttgcgtggcctggctgtccgtgtgttctagctgtccaggagctgtgggtggctg  
 ttgtgatgttaggaggaagagctcagggtgaaaaggaggagctgtctcaggctgcgtccagcaacagtgccca  
 gggctctgatgagctctctcatcgctgttaa (SEQ ID NO:124);  
 10 Cw\*1802 :  
 atgcgggtcatggcggcccgagccccctctcctgtctctcgggaggccctggcccagaccgagacctgggctgtct  
 cccactccatgaggtatctgcacaccgctgtctccggccggcgagagccccgtctcatctcagtgggcta  
 cgtggagcagacgcagttcgtgcggctgcagacgcagccgcgagctccgagaggggagccCggggcgccgtgggtg  
 gagcaggagggggccggagtattgggaccgggagacacagaagtacaagcgccaggcacaggctgaccgagtgaacc  
 15 tgcggaaactgcgcggctactacaaccagagcaggacgggtctcacacctccagaggatgtttggctgcgacct  
 gggggccggacgggcgctctctccgggtataaccagttcgcttacgacggcaaggattacatcgccctgaacgag  
 gaTctgcgtctctggaccgccgacacggcggtcagatcaccagcgcaagtgggaggcgcccgtagggcgg  
 agcagcggagagccctaccggaggcacgtgcgtggagtggtccgcagataccggagaacgggaaggagacgt  
 gcagcgcgcggaacacccaaagacacacgtgaccacacatcccgctctgaccaaggccacccagaggctgtgg  
 20 gcccgggcttctacccggcgagatcacactgacctggcagtggaaggaggaccacaaacaggacaccgagc  
 ttgtggagaccaggccagcaggagatggaacctccagaagtgggcagctgtgggtgtgcttctggagaagagca  
 gagaacacgtgccaatgtgcagcacgaggggtgccggagccccctacccagagatggAagccgtcttccagccc  
 accatccccatcgtgggcatcgttgcgtggcctggctgtccgtgtgttctagctgtccaggagctgtgggtggctg  
 ttgtgatgttaggaggaagagctcagggtgaaaaggaggagctgtctcaggctgcgtccagcaacagtgccca  
 25 gggctctgatgagctctctcatcgctgttaa (SEQ ID NO:125);

In the following, Probe Lists C1 and C2 are

shown In Tables 9-1 to 9-4 and Tables 10-1 to 10-4 respectively.

Table 9-1

Probe No.	Base Sequence
0	c acc ctc cag tgg atg tG ( SEQ ID No: 1 2 6)
1	c cgc ggg tat gac cag tA ( SEQ ID No: 1 2 7)
2	g acc gcc gcg gac acC ( SEQ ID No: 1 2 8)
3	ag aag tgg gca gct gtg A ( SEQ ID No: 1 2 9)
4	c ctc ctc cgc ggg tat A ( SEQ ID No: 1 3 0)
5	g cgc tcc tgg acc gcT ( SEQ ID No: 1 3 1)
6	g cac gag ggg ctg ccA ( SEQ ID No: 1 3 2)
7	ct gtc cta gga gct gtg A ( SEQ ID No: 1 3 3)
8	c acc ctc cag agg atg tC ( SEQ ID No: 1 3 4)
9	gg gag gcg gcc cgt gT ( SEQ ID No: 1 3 5)
10	ggg cgc ctc ctc cgc A ( SEQ ID No: 1 3 6)
11	c aag tgg gag gcg gcc T ( SEQ ID No: 1 3 7)
12	c cgt gag gcg gag cag T ( SEQ ID No: 1 3 8)
13	a gtg aac ctg cgg aaa ctA ( SEQ ID No: 1 3 9)
14	cc ctg ggc ttc tac cct A ( SEQ ID No: 1 4 0)
15	g acc gcc gcg gac acA ( SEQ ID No: 1 4 1)
16	gct gtg tcc cgg ccc A ( SEQ ID No: 1 4 2)
17	g acc gcc gcg gac acG ( SEQ ID No: 1 4 3)
18	cc ctg aga tgg gag ccA ( SEQ ID No: 1 4 4)
19	gg tct cac acc ctc cag A ( SEQ ID No: 1 4 5)
20	cgc ggg tat gac cag tC ( SEQ ID No: 1 4 6)
21	gcc tac ctg gag ggc gA ( SEQ ID No: 1 4 7)
22	c tcc cac tcc atg agg tG ( SEQ ID No: 1 4 8)
23	cgc ggg cat gac cag ttA ( SEQ ID No: 1 4 9)
24	g gac caa act cag gac acT ( SEQ ID No: 1 5 0)
25	c aac cag agc gag gcc A ( SEQ ID No: 1 5 1)
26	ag gcc agg tct cac atc A ( SEQ ID No: 1 5 2)
27	g aag tgg gca gct gtg G ( SEQ ID No: 1 5 3)
28	gcg gac acg gcg gcC ( SEQ ID No: 1 5 4)
29	at ggc tgc gac gtg ggA ( SEQ ID No: 1 5 5)
30	g gcc ggg tct cac atc A ( SEQ ID No: 1 5 6)

Table 9-2

Probe No.

Base Sequence

31	c atc atc cag agg atg taC ( SEQ ID No: 157)
32	c cgc aga tac ctg aag aaT ( SEQ ID No: 158)
33	ct cac acc ctc cag agC ( SEQ ID No: 159)
34	ctc ctc cgc ggg tat gT ( SEQ ID No: 160)
35	ca cag act gac cga gtg aa ( SEQ ID No: 161)
36	cga gtg aac ctg cgg aaA ( SEQ ID No: 162)
37	gg atg tat ggc tgc gac G ( SEQ ID No: 163)
38	gcc tac ctg gag ggc cT ( SEQ ID No: 164)
39	gac cgg gag aca cag aaC ( SEQ ID No: 165)
40	g gag ccc cac ttc atc G ( SEQ ID No: 166)
41	cga gtg agc ctg cgg aaA ( SEQ ID No: 167)
42	cgc ggg tat gac cag tTA ( SEQ ID No: 168)
43	g gag gcg gcc cgt gC ( SEQ ID No: 169)
44	c tac aac cag agc gag gA ( SEQ ID No: 170)
45	cgt gag gcg gag cag cT ( SEQ ID No: 171)
46	cta gct gtc cta gga gct A ( SEQ ID No: 172)
47	ggc tac gtg gac gac acA ( SEQ ID No: 173)
48	gc cgc gga gag ccc cA ( SEQ ID No: 174)
49	g aga tac acg tgc cat gtT ( SEQ ID No: 175)
50	ga ggg gag ccg cgg gA ( SEQ ID No: 176)
51	c atc gca gtg ggc tac C ( SEQ ID No: 177)
52	c tgc gac ctg ggg ccG ( SEQ ID No: 178)
53	tc tcc aca tcc gtg tcc T ( SEQ ID No: 179)
54	c aag cgc cag gca cag G ( SEQ ID No: 180)
55	gg acc gcc gcg gac aa ( SEQ ID No: 181)
56	ctc acc ctg aga tgg gG ( SEQ ID No: 182)
57	tg tgc gtg gag tgg ctG ( SEQ ID No: 183)
58	cc atc tct gac cat gag gT ( SEQ ID No: 184)
59	ac ctg gag aac ggg aag A ( SEQ ID No: 185)
60	c cgc ggg tat aac cag tT ( SEQ ID No: 186)

Table 9-3

Probe No.

Base Sequence

61	g gag ccg cgg gcg cG ( SEQ ID No: 187)
62	t ccg aga ggg gag ccC ( SEQ ID No: 188)
63	g agg tat ttc tac acc gcT ( SEQ ID No: 189)
64	c gac gcc gcg agt ccA ( SEQ ID No: 190)
65	gt cca aga ggg gag ccC ( SEQ ID No: 191)
66	gcg ccg tgg gtg gag A ( SEQ ID No: 192)
67	c acc ctc cag agg atg tA ( SEQ ID No: 193)
68	g atc acc cag cgc aag tT ( SEQ ID No: 194)
69	g acg ctg cag cgc gcA ( SEQ ID No: 195)
70	c tct gat gag tct ctc atc A ( SEQ ID No: 196)
71	gag cca tct tcc cag ccT ( SEQ ID No: 197)
72	ga gtc tac ctg gag ggA ( SEQ ID No: 198)
73	t gcg gcg gag cag gaC ( SEQ ID No: 199)
74	aac ctg cgc gcc tac taT ( SEQ ID No: 200)
75	g tct cac acc ctc cag aaT ( SEQ ID No: 201)
76	a gct gtg gtc acc gct aA ( SEQ ID No: 202)
77	c acc ctc cag agg atg tT ( SEQ ID No: 203)
78	ag gac ggg tct cac atc A ( SEQ ID No: 204)
79	ac atc atc cag agg atg tC ( SEQ ID No: 205)
80	tgc tct cag gct gcg tG ( SEQ ID No: 206)
81	c cgc ggg tat gac cag tT ( SEQ ID No: 207)
82	g gag acg ctg cag cgc A ( SEQ ID No: 208)
83	g ccc ctc acc ctg agC ( SEQ ID No: 209)
84	ggg agc tgc tct cag gT ( SEQ ID No: 210)
85	cgt acg gcg gag cag cT ( SEQ ID No: 211)
86	acc ctc cag agg atg taC ( SEQ ID No: 212)
87	tgg gag gcg gcc cgt A ( SEQ ID No: 213)
88	cgc aga tac ctg gag aac A ( SEQ ID No: 214)
89	gcc tac ctg gag gcc G ( SEQ ID No: 215)
90	ga tac ctg gag aac ggg G ( SEQ ID No: 216)

Table 9-4

Probe No.

Base Sequence

91	ac ctg cgc tcc tgg acT (SEQ ID No: 217)
92	g cgc tcc tgg acc gcG (SEQ ID No: 218)
93	a gag ccc cgc ttc atc G (SEQ ID No: 219)
94	c acc ctc cag tgg atg tA (SEQ ID No: 220)
95	cag tcc gcc tac gac gT (SEQ ID No: 221)
96	a cag gct gac cga gtg G (SEQ ID No: 222)
97	cac tcc atg agg tat ttc tC (SEQ ID No: 223)
98	c acc ctc cag tgg atg tT (SEQ ID No: 224)
99	a cag gct gac cga gtg aA (SEQ ID No: 225)
100	atc gcc ctg aac gag gaT (SEQ ID No: 226)
101	gc ctc ctc cgc ggg C (SEQ ID No: 227)
102	tc atg gcg ccc cga acT (SEQ ID No: 228)
103	cgc ggg cat gac cag tT (SEQ ID No: 229)
104	cgc ggg cat gac cag tC (SEQ ID No: 230)
105	gt gcg gcg gag cag cA (SEQ ID No: 231)
106	gct gtg gtg gct gtt gtT (SEQ ID No: 232)
107	cgt gcg gcg gag cag T (SEQ ID No: 233)
108	tg gtc gct gct gtg ata C (SEQ ID No: 234)
109	gg ctg cag gag ctc tG (SEQ ID No: 235)
110	cc ctg atc gag acc tgg A (SEQ ID No: 236)
111	cc ctc acc ctg aga tgg A (SEQ ID No: 237)
112	ggc ctg gct gtc ctg gT (SEQ ID No: 238)

Table 10-1

Probe No.

Base Sequence

0	g tgg atg tGt ggc tgc g (SEQ ID No: 239)
1	at gac cag tAc gcc tac g (SEQ ID No: 240)
2	gcg gac acC gcg gct c (SEQ ID No: 241)
3	gca gct gtg Atg gtg cct (SEQ ID No: 242)
4	cgc ggg tat Aac cag ttc (SEQ ID No: 243)
5	tgg acc gcT gcg gac ac (SEQ ID No: 244)
6	ggg ctg ccA gag ccc c (SEQ ID No: 245)
7	gga gct gtg Atg gct gtt (SEQ ID No: 246)
8	g agg atg tCt ggc tgc g (SEQ ID No: 247)
9	g gcc cgt gTg gcg gag (SEQ ID No: 248)
10	ctc ctc cgc Agg tat gac (SEQ ID No: 249)
11	g gcg gcc Tgt gag gcg (SEQ ID No: 250)
12	cg gag cag Tgg aga gcc (SEQ ID No: 251)
13	g cgg aaa ctA cgc ggc ta (SEQ ID No: 252)
14	ttc tac cct Acg gag atc a (SEQ ID No: 253)
15	gcg gac acA gcg gct c (SEQ ID No: 254)
16	c cgg ccc Agc cgc gg (SEQ ID No: 255)
17	gcg gac acG gcg gct c (SEQ ID No: 256)
18	a tgg gag ccA tct tcc ca (SEQ ID No: 257)
19	acc ctc cag Agg atg tat g (SEQ ID No: 258)
20	t gac cag tCc gcc tac g (SEQ ID No: 259)
21	g gag ggc gAg tgc gtg (SEQ ID No: 260)
22	cc atg agg tGt ttc tac ac (SEQ ID No: 261)
23	t gac cag tTA gcc tac gac (SEQ ID No: 262)
24	t cag gac acT gag ctt gtg (SEQ ID No: 263)
25	gc gag gcc Agg tct cac (SEQ ID No: 264)
26	tct cac atc Atc cag agg a (SEQ ID No: 265)
27	ca gct gtg Gtg gtg cct (SEQ ID No: 266)
28	acg gcg gcC cag atc ac (SEQ ID No: 267)
29	gac gtg ggA ccc gac g (SEQ ID No: 268)
30	g agg atg taC ggc tgc ga (SEQ ID No: 269)

Table 10-2

Probe No.

Base Sequence

31	c ctg aag aaT ggg aag gag ( SEQ ID No: 270)
32	c ctc cag agC atg tac gg ( SEQ ID No: 271)
33	gc ggg tat gTc cag tac g ( SEQ ID No: 272)
34	c cga gtg aAc ctg cgg a ( SEQ ID No: 273)
35	ctg cgg aaA ctg cgc gg ( SEQ ID No: 274)
36	c tgc gac Gtg ggg ccc ( SEQ ID No: 275)
37	g gag ggc cTg tgc gtg ( SEQ ID No: 276)
38	g aca cag aaC tac aag cgc G ( SEQ ID No: 277)
39	cac ttc atc Gca gtg ggc ( SEQ ID No: 278)
40	gcc cgt gCg gcg gag ( SEQ ID No: 279)
41	g agc gag gAc ggg tct c ( SEQ ID No: 280)
42	g gag cag cTg aga gcc t ( SEQ ID No: 281)
43	cta gga gct Atg gtg gct ( SEQ ID No: 282)
44	g gac gac acA cag ttc gt ( SEQ ID No: 283)
45	ga gag ccc cAc ttc atc g ( SEQ ID No: 284)
46	g tgc cat gTt cag cac ga ( SEQ ID No: 285)
47	ccg cgg gAg ccg tgg ( SEQ ID No: 286)
48	tg ggc tac Ctg gac gac ( SEQ ID No: 287)
49	ctg ggg ccG gac ggg ( SEQ ID No: 288)
50	c gtg tcc Tgg ccc ggc ( SEQ ID No: 289)
51	ag gca cag Gct gac cga ( SEQ ID No: 290)
52	c gcg gac aAg gcg gct ( SEQ ID No: 291)
53	tg aga tgg gGg cca tct t ( SEQ ID No: 292)
54	g gag tgg ctG cgc aga ta ( SEQ ID No: 293)
55	ac cat gag gTc acc ctg a ( SEQ ID No: 294)
56	aac ggg aag Aag acg ctg ( SEQ ID No: 295)
57	at aac cag tTc gcc tac ga ( SEQ ID No: 296)
58	cgg gcg cGg tgg gtg ( SEQ ID No: 297)
59	ggg gag ccC cgg gcg ( SEQ ID No: 298)
60	tac acc gcT gtg tcc cg ( SEQ ID No: 299)

Table 10-3

Probe No.

Base Sequence

61	gcg agt ccA aga ggg ga ( SEQ ID No: 300)
62	gg gtg gag Aag gag ggg ( SEQ ID No: 301)
63	ag agg atg tAt ggc tgc g ( SEQ ID No: 302)
64	g cgc aag tTg gag gcg g ( SEQ ID No: 303)
65	cag cgc gcA gaa ccc c ( SEQ ID No: 304)
66	g gct gcg tGc agc aac a ( SEQ ID No: 305)
67	tcc cag ccT acc atc cc ( SEQ ID No: 306)
68	ctg gag ggA ctg tgc gt ( SEQ ID No: 307)
69	g gag cag gaC aga gcc ta ( SEQ ID No: 308)
70	c ggc tac taT aac cag agc ( SEQ ID No: 309)
71	c ctc cag aaT atg tat ggc ( SEQ ID No: 310)
72	tc acc gct aAg atg tgt ag ( SEQ ID No: 311)
73	ag agg atg tTt ggc tgc g ( SEQ ID No: 312)
74	at gac cag tTc gcc tac g ( SEQ ID No: 313)
75	ggg ctg caA gag ccc c ( SEQ ID No: 314)
76	gc tct cag gTt gcg tgc a ( SEQ ID No: 315)
77	g gcc cgt Acg gcg gag ( SEQ ID No: 316)
78	ctg gag aac Agg aag aag a ( SEQ ID No: 317)
79	g gag ggc Ccg tgc gtg ( SEQ ID No: 318)
80	c ctc cag agC atg tat gg ( SEQ ID No: 319)
81	gag aac ggg Gag aag acg ( SEQ ID No: 320)
82	tcc tgg acT gcc gcg g ( SEQ ID No: 321)
83	tgg acc gcG gcg gac a ( SEQ ID No: 322)
84	gc ttc atc Gca gtg ggc ( SEQ ID No: 323)
85	ag tgg atg tAt ggc tgc g ( SEQ ID No: 324)
86	cc tac gac gTc aag gat ta ( SEQ ID No: 325)
87	c cga gtg Ggc ctg cgg ( SEQ ID No: 326)
88	gg tat ttc tCc aca tcc gt ( SEQ ID No: 327)
89	ag tgg atg tTt ggc tgc g ( SEQ ID No: 328)
90	g aac gag gaT ctg cgc tc ( SEQ ID No: 329)



Table 10-4

Probe No.	Base Sequence
91	c cgc ggg Cat gac cag ( SEQ ID No: 3 3 0)
92	ccc cga acT ctc ctc ct ( SEQ ID No: 3 3 1)
93	c cgc ggg Cat gac cag ( SEQ ID No: 3 3 2)
94	g gag cag cAg aga gcc t ( SEQ ID No: 3 3 3)
95	g gct gtt gtT atg tgt agg ( SEQ ID No: 3 3 4)
96	t gtg gtc gcT gct gtg at ( SEQ ID No: 3 3 5)
97	g gag ccc tGc acc ctg ( SEQ ID No: 3 3 6)
98	g acc tgg Acc ggc tcc ( SEQ ID No: 3 3 7)
99	ctg aga tgg Aag ccg tct ( SEQ ID No: 3 3 8)
100	ct gtc ctg gTt gtc cta g ( SEQ ID No: 3 3 9)

Table 11-1

Allele Number	Probe Number for Detection					
Cw*0102	0	1	2	3		
Cw*0103	4					
Cw*0104	5	6	7			
Cw*0105	8					
Cw*0106	9					
Cw*0107	10					
Cw*0108	11					
Cw*0109	12					
Cw*020201	13					
Cw*020202	14					
Cw*020203	15	12				
Cw*020204	16	17	18			
Cw*020205	16	19	20	17	12	21
Cw*0203	9	21				
Cw*0204	22					
Cw*0205	16	20	17	12	21	
Cw*0206	23	21				
Cw*030201	24	18				
Cw*030202	20	24				
Cw*030301	25	26	27			
Cw*030302	28					
Cw*030303	29					
Cw*030401	30	24				
Cw*030402	30	31	32			
Cw*0305	33	32				
Cw*0306	34					
Cw*0307	35	36	30	37	38	32
Cw*0308	39	30	24			
Cw*0309	40	30	38	32		
Cw*0310	41	30	37	38	32	
Cw*0311	25	26				

Table 11-2

Allele Number	Probe Number for Detection			
Cw*0312	25	42		
Cw*0313	25	27		
Cw*0314	43	32		
Cw*0315	44	20	38	32
Cw*0316	37	20	17	45
Cw*040101	46			
Cw*040102	47			
Cw*0403	48	49		
Cw*0404	50	45		
Cw*0405	51			
Cw*0406	48	52	45	
Cw*0407	53	54		
Cw*0408	50	38		
Cw*0410	50			
Cw*0501	36	55	56	
Cw*0502	57			
Cw*0503	58			
Cw*0504	20	55	59	
Cw*0505	37	60	55	59
Cw*0506	61			
Cw*0602	62	12	7	
Cw*0603	63	62	20	12
Cw*0604	62	45		
Cw*0605	64	65	20	17
Cw*0606	62	7		
Cw*0607	66			
Cw*0608	44	20	17	12
Cw*0609	62	60	12	21
Cw*070101	67	68	69	70
Cw*070102	71			

Table 11-3

Allele Number		Probe Number for Detection				
Cw*070201	8	68	70			
Cw*0703	72					
Cw*070401	73	70				
Cw*070402	74					
Cw*0705	75					
Cw*0706	76					
Cw*0707	36	67	20	68	69	
Cw*0708	77	20	68	69		
Cw*0709	36	44	67	20	68	69
Cw*0710	78	79	20	68	69	
Cw*0711	73	80				
Cw*0712	73					
Cw*0713	8	81	68	69		
Cw*0714	82					
Cw*0715	8	21	69			
Cw*0716	39	67	20	68	69	
Cw*0717	8	83				
Cw*0718	84					
Cw*080101	85	56				
Cw*080102	86	60	87			
Cw*0802	55	56				
Cw*0803	88	7				
Cw*0804	55	45	59			
Cw*0805	54	60	55	59		
Cw*0806	89	88				
Cw*0807	55	68	59			
Cw*0808	33	59				
Cw*0809	90					
Cw*120201	86	5	7			
Cw*120202	86	5	6	7		
Cw*120203	67	5				
Cw*120301	54	91	7			

Table 11-4

Allele Number		Probe Number for Detection					
Cw*120302	92	12					
Cw*120401	93	54	36	94	20	17	12
Cw*120402	54	36	91	7			
Cw*1205	36	91	7				
Cw*1206	95						
Cw*1207	96						
Cw*1208	39	86	5	6	7		
Cw*140201	97	20	27				
Cw*140202	97	98	20				
Cw*1403	97	64	20	27			
Cw*1404	97	99	98	20	100		
Cw*1405	97	94	20	100			
Cw*150201	23	7					
Cw*150202	48	39	36	101	23	45	
Cw*1503	54	23	7				
Cw*1504	20	45	7				
Cw*150501	102						
Cw*150502	101	103	7				
Cw*1506	101	7					
Cw*1507	48	39	101	23	45		
Cw*1508	48	39	36	30	101	23	
Cw*1509	101	104	45				
Cw*1510	39	36	101	23	45		
Cw*1511	16	48	36	101	23	45	
Cw*1601	105	106					
Cw*1602	36	105	106				
Cw*160401	107	106					
Cw*1701	108						
Cw*1702	109						
Cw*1703	110						
Cw*1801	111	112					
Cw*1802	62	100	111				

Table 12-1

Allele Number	Probe Number for Detection					
Cw*0102	0	1	2	3		
Cw*0103	4					
Cw*0104	5	6	7			
Cw*0105	8					
Cw*0106	9					
Cw*0107	10					
Cw*0108	11					
Cw*0109	12					
Cw*020201	13					
Cw*020202	14					
Cw*020203	15	12				
Cw*020204	16	17	18			
Cw*020205	16	19	20	17	12	21
Cw*0203	9	21				
Cw*0204	22					
Cw*0205	16	20	17	12	21	
Cw*0206	23	21				
Cw*030201	24	18				
Cw*030202	20	24				
Cw*030301	25	26	27			
Cw*030302	28					
Cw*030303	29					
Cw*030401	26	24				
Cw*030402	26	30	31			
Cw*0305	32	31				
Cw*0306	33					
Cw*0307	34	35	26	36	37	31
Cw*0308	38	26	24			
Cw*0309	39	26	37	31		
Cw*0310	35	26	36	37	31	
Cw*0311	25	26				

Table 12-2

Allele Number	Probe Number for Detection			
Cw*0312	25	23		
Cw*0313	25	27		
Cw*0314	40	31		
Cw*0315	41	20	37	31
Cw*0316	36	20	17	42
Cw*040101	43			
Cw*040102	44			
Cw*0403	45	46		
Cw*0404	47	42		
Cw*0405	48			
Cw*0406	45	49	42	
Cw*0407	50	51		
Cw*0408	47	37		
Cw*0410	47			
Cw*0501	35	52	53	
Cw*0502	54			
Cw*0503	55			
Cw*0504	20	52	56	
Cw*0505	36	57	52	56
Cw*0506	58			
Cw*0602	59	12	7	
Cw*0603	60	59	20	12
Cw*0604	59	42		
Cw*0605	61	59	20	17
Cw*0606	59	7		
Cw*0607	62			
Cw*0608	41	20	17	12 21
Cw*0609	59	57	12	
Cw*070101	63	64	65	66
Cw*070102	67			
Cw*070201	8	64	66	

Table 12-3

Allele Number	Probe Number for Detection				
Cw*0703	68				
Cw*070401	69	66			
Cw*070402	70				
Cw*0705	71				
Cw*0706	72				
Cw*0707	38	35	40	42	
Cw*0708	73	40	42		
Cw*0709	38	35	41	40	42
Cw*0710	26	8	20	64	42
Cw*0711	69	66			
Cw*0712	69				
Cw*0713	8	74	64	42	
Cw*0714	30	64	40	42	
Cw*0715	8	21			
Cw*0716	38	40	42		
Cw*0717	8	75			
Cw*0718	76				
Cw*080101	42	53			
Cw*080102	30	57	77		
Cw*0802	52	53			
Cw*0803	78	7			
Cw*0804	52	42	56		
Cw*0805	51	57	52	56	
Cw*0806	79	78			
Cw*0807	52	64	56		
Cw*0808	80	56			
Cw*0809	81				
Cw*120201	30	5	7		
Cw*120202	30	5	6	7	
Cw*120203	63	5			
Cw*120301	51	82	7		



Table 12-4

Allele Number	Probe Number for Detection						
Cw*120302	83	12					
Cw*120401	84	51	35	85	20	17	12
Cw*120402	51	35	82	7			
Cw*1205	35	82	7				
Cw*1206	86						
Cw*1207	87						
Cw*1208	38	30	5	6	7		
Cw*140201	88	20	27				
Cw*140202	88	89	20				
Cw*1403	88	61	20	27			
Cw*1404	88	34	89	20	90		
Cw*1405	88	85	20	90			
Cw*150201	23	7					
Cw*150202	45	38	35	91	23	42	
Cw*1503	51	23	7				
Cw*1504	20	42	7				
Cw*150501	92						
Cw*150502	91	74	7				
Cw*1506	91	7					
Cw*1507	45	38	91	23	42		
Cw*1508	45	38	35	26	91	23	
Cw*1509	91	20	42				
Cw*1510	38	35	91	23	42		
Cw*1511	16	45	35	91	23	42	
Cw*1601	94	95					
Cw*1602	35	94	95				
Cw*160401	12	95					
Cw*1701	96						
Cw*1702	97						
Cw*1703	98						
Cw*1801	99	100					
Cw*1802	59	90	99				

(Example 7)

Probes for identification of HLA-DP allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification  
5 Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe list 1 in Tables 13-1 to 13-3 or 14-1 to 14-3  
10 were used and 3  $\mu$ l of the mixed primers contains 1  $\mu$ l of respective solutions of the following primers (10 pmol/ $\mu$ l):

AAACACGGTCACCTCAGGGGGAT (SEQ ID NO: 245)

GGCCTGAGTGTGGTTGGAACG (SEQ ID NO: 246)

15 CCAGCTCGTAGTTGTGTCTGCA (SEQ ID NO: 247)

After PCR amplification, referring to Amp Plot and Dissociation curves on a display of 5700 software, and to the list in Table 15-1 for the probes in Table 13-1, or to the list in Tables 15-2 to 15-5 for the  
20 probes in Tables 13-2 to 13-3, it was identified as DPA1\*010301 and DPB1\*0901.

(Example 8)

Extraction of DNA from 1 ml of human blood was performed in the same way as in Example 1. PCR of  
25 human HLA-DP was then performed in the same manner as in Example 2 except that 6  $\mu$ l of the mixed primer consisting of 1  $\mu$ l each of the solutions containing

the following sequences at 10 pmol/ $\mu$ l respectively and 9  $\mu$ l of ultra pure water.

AAACACGGTCACCTCAGGGGGAT (SEQ ID NO: 245)

GGCCTGAGTGTGGTTGGAACG (SEQ ID NO: 246)

5 CCAGCTCGTAGTTGTGTCTGCA (SEQ ID NO: 247)

CCATGTGTCAACTTATGCC (SEQ ID NO: 248)

AGAATTACCTTTTCCAG (SEQ ID NO: 250)

AGAATTACGTTTTCAG (SEQ ID NO: 251)

At the same time, a DNA microarray was prepared  
10 to identify the allele in the specimen described  
above in the same manner as in Example 2, except that  
probes in Tables 14-1 and 14-2 were used to form the  
probe spots respectively.

Then, hybridization was performed using the  
15 above specimen and the prepared DNA microarray in the  
same manner as in Example 2. Fluorometry measurement  
was conducted with GenePix4000B (Axon). Referring to  
the list in Table 16-1 when the probes in Table 14-1  
were used, or to the list in Tables 16-2 to 16-5 when  
20 the probes in Table 14-2 were used, the sample was  
identified as DPA1\*010301 and DPB1\*0901.

#### Allele list

DPA1\*010301 :

25 ccaigtgtcaacttatgccgcgtttgtacagacgcatagaccaacaggGgagtttatgtttgaatttgaatgaAgat  
gagaigtgttctatgttggaatctggacaagaaggagaccgtctggcatctggaggagtttggccAagccttttccctttg  
aggctcagggcgggctggcctaacattgctatatatgaacaacaacttgaataccttgatccagcgttccaaccacac

tcaggccaccaac (SEQ ID NO: 1) ;

DPA1\*010302 :

gcgtttgtacagacgcatagaccaacaggAgagtttattgtttgaatttgatgaagatgagatgttctatgtggatc  
tggacaagaaggagaccgtctggcatctggaggagtttggccaagccctttcccttgaggctcagggcgggcaggc  
5 taacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacactcaggccaccaac (SEQ  
ID NO: 2) ;

DPA1\*0104 :

gccgcgtttgtacagacgcatagaccaacaggggagtttattgtttgaatttgatgaCgatgagatgttctatgtgg  
atctggacaagaaggagaccgtctggcatctggaggagtttggccaagccctttcccttgaggctcagggcgggc  
10 ggctaacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacactcaggccaccaac (SE  
Q ID NO: 3) ;

DPA1\*0105 :

gccgcgtttgtacagacgcatagaccaacaggggagtttattgtttgaatttgatgaagaigagatgttctatgtgg  
atctggacaagaaggagaccgtctggcatctggaggagtttggccaagccctttcccttgaggctcagggcgggc  
15 ggctaacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacactcaggccgccaT (SE  
Q ID NO: 4) ;

DPA1\*0106 :

ccatgtgtcaacttatgccgcgtttgtacagacgcatagaccaacaggggagtttattgtttgaatttgatgaaga  
gagcagtttctatgtggatctggataaAaaggagaccgtctggcatctggaggagtttggccaagccctttcccttg  
20 aggcctcagggcgggcaggctaacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacac  
tcaggccaccaac (SEQ ID NO: 5) ;

DPA1\*0107 :

catgtgtcaacttatgccgcgtttgtacagacgcatagaccaacaggggagtttattgtttgaatttgatgaaga  
agaatgttctatgtggatctggacaagaaggagaccgtctggcatctggaggagtttggccaaAccctttcccttga  
25 ggctcagggcgggcaggctaacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacac  
caggccaccaac (SEQ ID NO: 6) ;

DPA1\*0108 :

ccaatgltgcaacttaagccgcgtttgtacagacgcatagaccaacaggggagtttaagtttgaatttgatgaCgat  
gagatgttctatgttgatctggacaagaaggagaccgtctggcatctggaggagtttggccGagccctttccctttg  
aggctcagggcgggcggcgaacatigctatataatgaacaacaacttgaatacccttgatccagcgttccaaccacac  
tcaggccaccaac (SEQ ID NO: 7) ;

5 DPAI\*020101 :

ccaatgltgcaacttaagccgcgtttgtacagacCcatagaccaacaggggagtttaagtttgaatttgatgaagat  
gagcagttctatgttgatctggataaAaaggagaccgtctggcatctggaggagtttggccgagccctttccctttg  
aggctcagggcgggcggcgaacatigctatataatgaacaacaacttgaatacccttgatccagcgttccaaccacac  
tcaggccgccaat (SEQ ID NO: 8) ;

10 DPAI\*020102 :

ccaatgltgcaacttaagccgcgtttgtacagacgcatagaccaacaggggagtttaagtttgaatttgatgaagat  
gagcagttctatgttgatctggataaAaaggagaccgtctggcatctggaggagtttggccgagccctttccctttg  
aggctcagggcgggcggcgaacatigctatataatgaacaacaacttgaatacccttgatccagcgttccaaccacac  
tcaggccgccaat (SEQ ID NO: 9) ;

15 DPAI\*020103 :

ccaatgltgcaacttaagccgcgtttgtacagacgcatagaccaacaggggagtttaagtttgaatttgatgaagat  
gagcAgttctatgttgatctggacaagaaggagaccgtctggcatctggaggagtttggccgagccctttccctttg  
aggctcagggcgggcggcgaacatigctatataatgaacaacaacttgaatacccttgatccagcgttccaaccacac  
tcaggccgccaat (SEQ ID NO: 10) ;

20 DPAI\*020104 :

gcgtttgtacaaacccatagaccaacaggggagtttaagtttgaatttgatgaagatgagcagttctatgttgatc  
tggataaAaaggagaccgtctggcatctggaggagtttggccgagccctttccctttgaggctcagggcgggcggc  
taacatigctatataatgaacaacaacttgaatacccttgatccagcgttccaaccacac tcaggccgccaat (SEQ  
ID NO: 11) ;

25 DPAI\*020105 :

ccaatgltgcaacttaagccgcgtttgtacagacgcatagaccaacaggAgagtttaagtttgaatttgatgaagat  
gagcAgttctatgttgatctggacaagaaggagaccgtctggcatctggaggagtttggccgagccctttccctttg

aggctcagggcgggctggctaacaatgctatattgaacaacaactlgaataacctlgaatccagcgltccaaccacac  
tcaggccgccaat(SEQ ID NO: 1 2) ;

DPA1\*020106 :

ccaatgltgaacttatgccggtttgtacagacCcatagaccaacaggggagtttatgtttgaattlgaatgaaga  
5 gaggcagttctatgttgatctggataagaaggagaccgtctggcatctggaggagtttggccgagccttttccittg  
aggctcagggcgggctggctaacaatgctatattgaacaacaactlgaataacctlgaatccagcgltccaaccacac  
tcaggccgccaat(SEQ ID NO: 1 3) ;

DPA1\*020201 :

aacttatgccatgtttgtacagacccatagaccaacaggAgagtttatgtttgaattlgaatgaagaatgaggcagttc  
10 tatgttgatctggataagaaggagaccgtctggcatctggaggagtttggccgagccttttccittgaggctcagg  
gcgggctggctaacaatgctatattgaacaacaactlgaataacctlgaatccagcgltccaaccacacatcaggccgc  
caaT(SEQ ID NO: 1 4) ;

DPA1\*020202 :

ccaatgltgaacttatgccatgtttgtacagacCcatagaccaacaggAgagtttatgtttgaattlgaatgaaga  
15 gaggcagttctatgttgatctggataagaaggagaccgtctggcatctggaggagtttggccgagccttttccittg  
aggctcagggcgggctggctaacaatgctatattgaacaacaactlgaataacctlgaatccagcgltccaaccacac  
tcaggccgccaat(SEQ ID NO: 1 5) ;

DPA1\*020203 :

atgltgaacttatgccatgtttgtacagacccatagaccaacaggggagtttatgtttgaattlgaatgaaga  
20 ggcagttctatgttgatctggataagaaggagaccgtctggcatctggaggagtttggccgagccttttccittgag  
gctcagggcgggctggctaacaatgctatattgaacaacaactlgaataacctlgaatccagcgltccaaccacac  
aggccgccaat(SEQ ID NO: 1 6) ;

DPA1\*0203 :

ccaatgltgaacttatgccggtttgtacagacCcatagaccaacaggggagtttatgtttgaattlgaatgaaga  
25 gagaatgltctatgttgatctggataagaaggagaccgtctggcatctggaggagtttggccgagccttttccittg  
aggctcagggcgggctggctaacaatgctatattgaacaacaactlgaataacctlgaatccagcgltccaaccacac  
tcaggccgccaat(SEQ ID NO: 1 7) ;

DPAI\*0301 :

gccatgtttgtacagacccatagaccaacaggggagtttatgtttgaatttgatgaagatgagatgttctatgttg  
atctggacaagaaggagaccgtctggcatctggaggagtttggccaagccttttccctttgaggctcagggcgggct  
ggctaacattgctatataCgaacaacaacttgaataaccttgatccagcgttccaaccacactcaggccaccaac (SE  
5 Q ID NO: 18) ;

DPAI\*0302 :

ccatgtgtcaacttatgccatgtttgtacagacccatagaccaacaggggagtttatgtttgaatttgatgaagat  
gagatgttctatgttggaatctggacaagaaggagaccgtctggcatctggaggagtttggccaagccttttccctttg  
aggctcagggcgggctggctaacattgctatataTgaacaacaacttgaataaccttgatccagcgttccaaccacac  
10 tcaggccaccaac (SEQ ID NO: 19) ;

DPAI\*0401 :

gccgcgtttgtacagacgcatagaacaacaggagagtttatgtttgagtttgatgatgatgagatgttctatgttg  
atctggacaagaaggagaccgtctggcatctggaggagtttggccgagccttttccctttgaggctcagggcgggct  
ggctaacattgctatataTgaacaacaacttgaataatcgctatccagcgttccaaccacactcaggccgccaat (SE  
15 Q ID NO: 20) ;

DPBI\*010101 :

agaattacgtgtaccaggagcggcaggaatgtctacgcgtttaatgggacacagcgttccctggagagatacatctta  
caaccgggaggagtagcgcgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgct  
gcggagtagtgaacagccagaaggacatccctggaggagaagcgggcagtgccggacaggGtAgtcagacacaact  
20 acgagctggacgaggccgtgacctgcagcgccgagttcc (SEQ ID NO: 21) ;

DPBI\*010102 :

aatlacgtgtaccaggagcggcaggaatgtctacgcgtttaatgggacacagcgttccctggagagatacatctaca  
accgggaggagtagcgcgcgttcgacagcgacgtgggAgagttccgggcggtgacggagctggggcggcctgctgct  
ggagtagtgaacagccagaaggacatccctggaggagaagcgggcagtgccggacaggGtAgtcagacacaactac  
25 gagctggacgaggccgtgacctgcagcgccga (SEQ ID NO: 22) ;

DPBI\*020102 (SEQ ID NO: 23) :

agaattaccttttccaggagcggcaggaatgtctacgcgtttaatgggacacagcgttccctggagagatacatctta

caaccgggaggagtlcgtgcgttcgacagcgacgtgggggagtlccgggcggtgacggagctggggcgccctgat  
gAggagtlactggaacagccagaaggacatccctggaggagGagcgggcagtgccggacaggatGtcagacacaact  
acgagctggGcggggcccatgacctgcagcgccgagtc (SEQ ID NO: 24) ;

DPBI\*020103 :

- 5 agaattaccctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaggagtlcgtgcgttcgacagcgacgtgggggagtlccgggcggtgacggagctggggcgccctgaC  
gaggagtlactggaacagccagaaggacatccctggaggaggagcgggcagtgccggacaggatGtcagacacaact  
acgagctgggcggggcccatgacctgcagcgccgag (SEQ ID NO: 25) ;

DPBI\*020104 :

- 10 agaattaccctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaggagtlcgtgcgttcgacagcgacgtgggggagtlccgggcggtgacggagctggggcgccctgat  
gaggagtlactggaacagccagaaggacatccctggaggaggagcgggcagtgccggacaggatGtcagacacaact  
acgagctgggcggggcccatgacctgcagcgccga (SEQ ID NO: 26) ;

DPBI\*020105 :

- 15 agaattaccctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaAgagtlcgtgcgttcgacagcgacgtgggggagtlccgggcggtgacggagctggggcgccctgat  
gaggagtlactggaacagccagaaggacatccctggaggaggagcgggcagtgccggacaggatGtcagacacaact  
acgagctgggcggggcccatgacctgcagcgccgag (SEQ ID NO: 27) ;

DPBI\*020106 :

- 20 agaattaccctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
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gaggagtlactggaacagccagaaggacatccctggaggaggagcgggcagtgccggacaggatGtcagacacaact  
acgagctgggcggggcccatgacctgcagcgccgag (SEQ ID NO: 28) ;

DPBI\*0202 :

- 25 agaattaccctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaggagCtcgtgcgttcgacagcgacgtgggggagtlccgggcggtgacggagctggggcgccctgaG  
gcggagtlactggaacagccagaaggacatccctggaggagGagcgggcagtgccggacaggatGtcagacacaact



acgagciggcgggcccAigacccigcagcgccgag (SEQ ID NO: 29) ;

DPBI\*030101 :

agaattacgtgaccagTaccgcaggaatgctacgcgtttaatgggacacagcgcttcciggagagatacatcta  
caaccgggaggagTcgTgcgttcgacagcgacgtgggggagTccgggcggtgacggagcTggggcgccTgat  
5 gaggaCtactggaacagccagaaggacCtccTggaggagaagcgggcagTccggacagggtatgcagacacaact  
acgagcTggacgaggccgtgacccTgcagcgccgagTcc (SEQ ID NO: 30) ;

DPBI\*030102 :

agaattacgtgaccagTaccgcaggaatgctacgcgtttaatgggacacagcgcttcciggagagatacatcta  
caaccgggaggagTcgTgcgttcgacagcgacgtgggggagTccgggcggtgacggagcTggggcgccTgat  
10 gaggacTactggaacagccagaaggacCtccTggaggagaagcgggcagTccggacagggtatgcagacacaact  
acgagcTggacgaggccgtgacccTAcagcgccgag (SEQ ID NO: 31) ;

DPBI\*0401 :

agaattaccTttccagggacggcaggaatgctacgcgtttaatgggacacagcgcttcciggagagatacatcta  
caaccgggaggagTcgTgcgttcgacagcgacgtgggggagTccgggcggtgacggagcTggggcgccTgct  
15 gcggagTactggaacagccagaaggacatccTggaggagaagcgggcagTccggacaggatGtgcagacacaact  
acgagcTggGcgggcccTgacccTgcagcgccgagTcc (SEQ ID NO: 32) ;

DPBI\*0402 :

agaattaccTttccagggacggcaggaatgctacgcgtttaatgggacacagcgcttcciggagagatacatcta  
caaccgggaggagTcgTgcgttcgacagcgacgtgggggagTccgggcggtgacggagcTggggcgccTgat  
20 gAggagTactggaacagccagaaggacatccTggaggagaagcgggcagTccggacaggatGtgcagacacaact  
acgagcTggGcgggcccTgacccTgcagcgccgagTcc (SEQ ID NO: 33) ;

DPBI\*0501 :

agaattaccTttccagggacggcaggaatgctacgcgtttaatgggacacagcgcttcciggagagatacatcta  
caaccgggaggagCtgcTgcgttcgacagcgacgtgggggagTccgggcggtgacggagcTggggcgccTgaG  
25 gcggagTactggaacagccagaaggacatccTggaggagaagcgggcagTccggacaggatGtgcagacacaact  
acgagcTggacgaggccgtgacccTgcagcgccgag (SEQ ID NO: 34) ;

DPBI\*0601 :

agaattacgtgtaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccitggagagatacatctacaaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgatgaggaCtactggaacagccagaaggacCtccitggaggagGagcgggcagtgccggacaggatGtgcagacacaactacgagctggacgaggccgtgacccitgcag (SEQ ID NO: 35) ;

5 DPB1\*0801 :

cttttccagggacggcaggaatgctacgcgtttaatgggacacagcgcttccitggagagatacatctacaaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgatgAggagtacltgaacagccagaaggacatccitggaggagGagcgggcagtgccggacagggtatgcagacacaactacgagctggacgaggccgtgacccitgcag (SEQ ID NO: 36) ;

10 DPB1\*0901 :

agaattacgtgcaccagtTacggcaggaatgctacgcgtttaatgggacacagcgcttccitggagagatacatctacaaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgatgaggaCtactggaacagccagaaggacatccitggaggagGagcgggcagtgccggacagggtatgcagacacaactacgagctggacgaggccgtgacccitgcagcgccgag (SEQ ID NO: 37) ;

15 DPB1\*1001 :

agaattacgtgcaccagtTacggcaggaatgctacgcgtttaatgggacacagcgcttccitggagagatacatctacaaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgatgAggagtlactggaacagccagaaggacatccitggaggagGagcgggcagtgccggacagggtatgcagacacaactacgagctggacgaggccgtgacccitgcagcgccgag (SEQ ID NO: 38) ;

20 DPB1\*110101 :

ggtgtaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccitggagagatacatctacaaccggCaggagtlacgcgcgcttcgacagcgacgtgggagagttccgggcggtgacggagctggggcggcctgtcgtcggagtacltgaacagccagaaggacctccitggaggagaggcgggcagtgccggacaggatgtgcagacacaactacgagctggacgaggccgtgacccitgcag (SEQ ID NO: 39) ;

25 DPB1\*110102 :

agaattacgtgtaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccitggagagatacatctacaacAggcaggagtlacgcgcgcttcgacagcgacgtgggagagttccgggcggtgacggagctggggcggcctgct

gcggagtlactggaacagccagaaggacctcctggaggagaggcggcagtgccggacaggatgtgcagacacaact  
acgagctggacgaggccgtgacctgcag (SEQ ID NO: 40) ;

DPB1\*1301 :

agaattacgtgtaccagTaccggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatacatctta  
5 caaccgggaggagtlacgcgcgttcgacagcgacgtgggggagtlccgggcggtgacggagctggggcgccctgct  
gcggagtlactggaacagccagaaggacatcctggaggagGagcgggcagtgccggacaggAtatgcagacacaact  
acgagctggacgaggccgtgacctgcag (SEQ ID NO: 41) ;

DPB1\*1401 :

agaattacgtgcaccagTaccggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatacatctta  
10 caaccgggaggagtlcgTgcgcttcgacagcgacgtgggggagtlccgggcggtgacggagctggggcgccctgat  
gaggaCtactggaacagccagaaggacCtccctggaggagaagcgggcagtgccggacagggtatgcagacacaact  
acgagctggacgaggccgtgacctgcag (SEQ ID NO: 42) ;

DPB1\*1501 :

agaattacgtgtaccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatacatctta  
15 caaccggCaggagtlacgcgcgttcgacagcgacgtgggagagtlccgggcggtgacggagctggggcgccctgct  
gcggagtlactggaacagccagaaggacctcctggaggagaggcgggcagtgccggacaggatgtgcagacacaact  
acgagctggctggggcccAtgacctgcagcgccgag (SEQ ID NO: 43) ;

DPB1\*1601 :

agaattaccttttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatacatctta  
20 caaccgggaggagtlcgTgcgcttcgacagcgacgtgggggagtlccgggcggtgacggagctggggcgccctgat  
gAggagtlactggaacagccagaaggacatcctggaggagGagcgggcagtgccggacaggatGtgcagacacaact  
acgagctggacgaggccgtgacctgcagcgccgag (SEQ ID NO: 44) ;

DPB1\*1701 :

agaattacgtgcaccagTaccggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatacatctta  
25 caaccgggaggagtlcgTgcgcttcgacagcgacgtgggggagtlccgggcggtgacggagctggggcgccctgat  
gaggaCtactggaacagccagaaggacatcctggaggagGagcgggcagtgccggacaggatGtgcagacacaact  
acgagctggacgaggccgtgacctgcagcgccgag (SEQ ID NO: 45) ;

DPBI\*1801 :

giglacaggacggcaggaatgctacgcgtttaatgggacacagcgcttcciggagagatacatctacaaccggg  
aggagttcgTgcgttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgccctgaGAggagla  
ctggaacagccagaaggacatcciggaggagaagcgggcagtgccggacaggatgigcagacacaactacgagctg  
5 gTggggcccatgacccigcag (SEQ ID NO: 46) ;

DPBI\*1901 :

agaattacctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttcciggagagatacatctta  
caaccgggaggagttcgigcgcttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgccctgaG  
gcggagttaciggaacagccagaaggacatcciggaggagGagcgggcagtgccggacaggAtatgcagacacaact  
10 acgagctggacgaggccgtgacctgcagcgccgag (SEQ ID NO: 47) ;

DPBI\*200101 :

agaattacgtgtaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttcciggagagatacatctta  
caaccgggaggagttcgigcgcttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgccctgaG  
gaggactaciggaacagccagaaggacCtcciggaggagaagcgggcagtgccggacaggatGigcagacacaact  
15 acgagctggacgaggccgtgacctgcagcgccgag (SEQ ID NO: 48) ;

DPBI\*200102 :

agaattacgtgtaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttcciggagagatacatctta  
caaccgggaggagttcgigcgcttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgccctgaG  
gaggactaciggaacagccagaaggaccCtcciggaggagaagcgggcagtgccggacaggatGigcagacacaact  
20 acgagctggacgaggccgtgacctgcagcgTcga (SEQ ID NO: 49) ;

DPBI\*2101 :

agaattacgtgtaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttcciggagagatacatctta  
caaccgggaggagCtcgigcgcttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgccctgaG  
gcggagttaciggaacagccagaaggacatcciggaggagGagcgggcagtgccggacaggatGigcagacacaact  
25 acgagctggacgaggccgtgacctgcagcgccgag (SEQ ID NO: 50) ;

DPBI\*2201 :

agaattacctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttcciggagagatacatctta

caaccgggaggagCtcgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgcc tgaG  
gcggagtlac tggaaacagccagaaggacatcc tggaggagGagcgggcagtgccggacaggatGtcagacacaact  
acgagctggacgaggccgtgaccc tgcagcgccgag (SEQ ID NO: 5 1) ;

DPBI\*2301 :

- 5 agaattacctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttcc tggagagatacatctla  
caaccgggaggagttcgTgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgcc tgc t  
gcggagtlac tggaaacagccagaaggacatcc tggaggagaagcgggcagtgccggacaggatGtcagacacaact  
acgagctggGcggggcccatgaccc tgcagcgccgag (SEQ ID NO: 5 2) ;

DPBI\*2401 :

- 10 agaattacctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttcc tggagagatacatctla  
caaccgggaggagttcgTgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgcc tgaG  
gcggagtlac tggaaacagccagaaggacatcc tggaggagaagcgggcagtgccggacaggatGtcagacacaact  
acgagctgggcggggccAtgaccc tgcagcgccgag (SEQ ID NO: 5 3) ;

DPBI\*2501 :

- 15 agaattacgtglaccagtlacggcaggaatgctacgcgtttaatgggacacagcgcttcc tggagagatacatctla  
caaccgggaggagttcgTgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgcc tga t  
gAggagtlac tggaaacagccagaaggacCtcc tggaggagaagcgggcagtgccggacagggtatgcagacacaact  
acgagctggacgaggccgtgaccc tgcagcgccgag (SEQ ID NO: 5 4) ;

DPBI\*260101 :

- 20 ggtlaccagtlacggcaggaatgctacgcgtttaatgggacacagcgcttcc tggagagatacatctlaaaccggg  
aggagtlacgcgcgttcgacagcgacgtgggagagttccgggcggtgacggagctggggcgcc tgc tgcggagla  
ctggaaacagccagaaggacatcc tggaggagaagcgggcagtgccggacagAgta tgcagacacaactacgagctg  
gacgaggccgtgaccc tgcagcgccgag (SEQ ID NO: 5 5) ;

DPBI\*260102 :

- 25 gtgtaccagtlacggcaggaatgctacgcgtttaatgggacacagcgcttcc tggagagatacatctlaaaccggg  
aggagtlacgcgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgcc tgc tgcggagla  
ctggaaacagccagaaggacatcc tggaggagaagcgggcagtgccggacagggtatgcagacacaactacgagctg

gacgaggccgtgacctgcagcgccga (SEQ ID NO: 56) ;

DPB1\*2701 :

agaattacgtgtaccagTaccgcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctla  
caaccgggaggagTaccgcgcttcgacagcgacgtgggggagTccgggcggtgacggagctggggcgccTgct  
5 gcggagTactggaacagccagaaggacatccTggaggagaagcgggcagTgccggacaggatGtcagacacaact  
acgagctggacgaggccgtgacctgcagcgccgag (SEQ ID NO: 57) ;

DPB1\*2801 :

agaattaccTttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctla  
caaccgggaggagTtcgcgcttcgacagcgacgtgggggagTccgggcggtgacggagctggggcgccTgat  
10 gAggagTactggaacagccagaaggacCtccTggaggagaagcgggcagTgccggacaggatGtcagacacaact  
acgagctggTcggggccatgacctgcagcgccgag (SEQ ID NO: 58) ;

DPB1\*2901 :

agaattacgtgtaccagTaccgcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctla  
caaccgggaggagTtcgtgcgcttcgacagcgacgtgggggagTccgggcggtgacggagctggggcgccTgat  
15 gaggaCtactggaacagccagaaggacCtccTggaggagGagcgggcagTgccggacaggatGtcagacacaact  
acgagctggacgaggccgtgacctgcagcgccgag (SEQ ID NO: 59) ;

DPB1\*3001 :

agaattacgtgtaccagTaccgcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctla  
caaccgggaggagTtcgtgcgcttcgacagcgacgtgggggagTccgggcggtgacggagctggggcgccTgaG  
20 gcggagTactggaacagccagaaggacatccTggaggagGagcgggcagTgccggacaggatGtcagacacaact  
acgagctggacgaggccgtgacctgcag (SEQ ID NO: 60) ;

DPB1\*3101 :

agaattaccTttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctla  
caaccgggaggagTtcgcgcttcgacagcgacgtgggggagTccgggcggtgacggagctggggcgccTgct  
25 gcggagTactggaacagccagaaggaccTccTggaggagaagcgggcagTgccggacaggatGtcagacacaact  
acgagctggacgaggccgtgacctgcagcgccgag (SEQ ID NO: 61) ;

DPB1\*3201 :

agaattacctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggcctgat  
gaggTgtactggaacagccagaaggacatccctggaggaggagcgggcagtgccggacaggatgtgcagacacaact  
acgagctgggcgggcccattgacctgcagcgccgag (SEQ ID NO: 6 2) ;

## 5 DPBI\*3301 :

agaattacctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggcctgct  
gcggagtactggaacagccagaaggacatccctggaggagGagcgggcagtgccggacaggatGtcagacacaact  
acgagctggGcgggcccattgacctgcag (SEQ ID NO: 6 3) ;

## 10 DPBI\*3401 :

agaattacctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaggagctcgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggcctgct  
gcggagtactggaacagccagaaggacctccctggaggagaagcgggcattgccggacaggatGtcagacacaact  
acgagctggctgggcccAttgacctgcag (SEQ ID NO: 6 4) ;

## 15 DPBI\*3501 :

agaattacgtgtaccagtTaccgcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggcctgat  
gaggactactggaacagccagaaggacatccctggaggagaagcgggcagtgccggacaggatGtcagacacaact  
acgagctggacgaggccgtgacctgcag (SEQ ID NO: 6 5) ;

## 20 DPBI\*3601 :

agaattacgtgtaccagtTaccgcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaggagCtcgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggcctgaG  
gcggagtactggaacagccagaaggacatccctggaggagaagcgggcagtgccggacaggatGtcagacacaact  
acgagctggacgaggccgtgacctgcagcgccgag (SEQ ID NO: 6 6) ;

## 25 DPBI\*3701 :

gtgtaccagttaccgcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatacttaaccggg  
aggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggcctgatGaggagta

ctggaacagccagaaggacatccctggaggagGagcgggcagtgccggacagggtatgcagacacaactacgagctg  
gacgaggccgtgacctgcagcgccgag (SEQ ID NO: 67) ;

DPBI#3801 :

cttttccaggacggcaggaatgctacCcgittaatgggacacagcgcttccctggagagatatactacaaccggg  
5' aggagctcgtgcgttcgacagcgacgtgggggagttccggcggtgacggagctggggcgccctgaggcggagta  
ctggaacagccagaaggacatccctggaggagaagcgggcagtgccggacaggatgtgcagacacaactacgagctg  
gacgaggccgtgacctgcag (SEQ ID NO: 68) ;

DPBI#3901 :

agaattaccitttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
10 caaccgggaggagtagcgcgcttcgacagcgacgtgggggagttccggcggtgacggagctggggcgccctgct  
gcggagtagctggaacagccagaaggacatccctggaggagaagcgggcagtgccggacaggatGtcagacacaact  
acgagctggGcgggcccattgacctgcagcgccga (SEQ ID NO: 69) ;

DPBI#4001 :

agaattaccitttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
15 caaccgggaggagtagcgcgcttcgacagcgacgtgggggagttccggcggtgacggagctggggcgccctgct  
gcggagtagctggaacagccagaaggacatccctggaggagaagcgggcagtgccggacaggatgtgcagacacaact  
acgagctggTcgggcccattgacctgcagcgccga (SEQ ID NO: 70) ;

DPBI#4101 :

aattaccitttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
20 accgggaggagttcgtgcgttcgacagcgacgtgggggagttccggcggtgacggagctggggcgccctgaltga  
ggagtagctggaacagccagaaggacTtccctggaggagGagcgggcagtgccggacaggatgtgcagacacaactac  
gagctgggcgggcccattgacctgcagcgccga (SEQ ID NO: 71) ;

DPBI#4401 :

agaattacgtgtaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
25 caaccgggaggagCtcgtgcgttcgacagcgacgtgggggagttccggcggtgacggagctggggcgccctgaltga  
gaggactaciggaacagccagaaggacCtccctggaggagGagcgggcagtgccggacagggtatgcagacacaact  
acgagctggacgaggccgtgacctgcagcgccgag (SEQ ID NO: 72) ;



DPBI\*4501 :

glgcaccagtlacggcaggaatgclacgcgtltaatgggacacagcgctlcciggagagatacatctacaaccggg  
aggagtlcgTgcgttcgacagcgacgtgggggagtlccgggcggtagcgagctggggcgccctgatgAggagla  
clggaacagccagaaggacCtcciggaggagaagcgggcagtgccggacagggaatgcagacacaactacgagctg  
5 gacgaggccgtgacctgcag(SEQ ID NO: 7 3) ;

DPBI\*4601 :

agaattacccttccaggacggcaggaatgclacgcgtltaatgggacacagcgctlcciggagagatacatctaca  
caaccgggaggagtlcgtagcgttcgacagcgacgtgggggagtlccgggcggtagcgagctggggcgccctgat  
gaggaCtactggaacagccagaaggacatcciggaggagGagcgggcagtgccggacaggatgtgcagacacaact  
10 acgagctgggcgggcccAtgacctgcagcgccgag(SEQ ID NO: 7 4) ;

DPBI\*4701 :

agaattacccttccaggacggcaggaatgclacgcgtltaatgggacacagcgctlcciggagagatacatctaca  
caaccgggaggagtlcgtagcgttcgacagcgacgtgggggagtlccgggcggtagcgagctggggcgccctgaG  
gaggagtlactggaacagccagaaggacatcciggaggagGagcgggcagtgccggacaggatgtgcagacacaact  
15 acgagctgggcgggcccAtgacctgcagcgccgag(SEQ ID NO: 7 5) ;

DPBI\*4801 :

aattacccttccaggacggcaggaatgclacgcgtltaatgggacacagcgctlcciggagagatacatctaca  
accgggaggagtlcgtagcgttcgacagcgacgtgggggagtlccgggcggtagcgagctggggcgccctgatGA  
ggagtlactggaacagccagaaggacatcciggaggaggagcgggcagtgccggacaggatgtgcagacacaactac  
20 gagctggGcgggcccAtgacctgcag(SEQ ID NO: 7 6) ;

DPBI\*4901 :

aattacccttccaggacggcaggaatgclacgcgtltaatgggacacagcgctlcciggagagatacatctaca  
accgggaggagtlacgcgcgttcgacagcgacgtgggggagtlccgggcggtagcgagctggggcgccctgatGA  
ggagtlactggaacagccagaaggacatcciggaggagaagcgggcagtgccggacaggatGlgcagacacaactac  
25 gagctggGcgggcccAtgacctgcag(SEQ ID NO: 7 7) ;

DPBI\*5001 :

aattacgtlaccaggacggcaggaatgclacgcgtltaatgggacacagcgctlcciggagagatacatctaca

accgggaggagttcgTgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctgatga  
ggaCtacttggaacagccagaaggacCtcttgaggagaagcgggcagtgccggacagggtatgcagacacaactac  
gagctggacgaggccgtgacctgcag (SEQ ID NO: 78) ;

DPB1#5101 :

- 5 agaattacctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttcttgagagatatactta  
caaccgggaggagttcgTgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctgat  
gAggagttacttggaacagccagaaggacatcttgaggagaagcgggcagtgccggacaggatGtgcagacacaact  
acgagctggGcgggcccattgacctgcagcgccgag (SEQ ID NO: 79) ;

DPB1#5201 :

- 10 agaattacgtgtaccagtTcggcaggaatgctacgcgtttaatgggacacagcgcttcttgagagatatactta  
caaccgggaggagttcgTgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctgct  
gcggagttacttggaacagccagaaggacCtcttgaggagaagcgggcagtgccggacagggtatgcagacacaact  
acgagctggacgaggccgtgacctgcag (SEQ ID NO: 80) ;

DPB1#5301 :

- 15 agaattacctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttcttgagagatatactta  
caaccgggaggagttacgcgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctgat  
gAggagttacttggaacagccagaaggacatcttgaggagaagcgggcagtgccggacaggatgtgcagacacaact  
acgagctggTcgggcccattgacctgcag (SEQ ID NO: 81) ;

DPB1#5401 :

- 20 agaattacgtgcaccagtTcggcaggaatgctacgcgtttaatgggacacagcgcttcttgagagatatactta  
caaccgggaggagttcgtgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctgaG  
gcggagttacttggaacagccagaaggacatcttgaggagGagcgggcagtgccggacagggtatgcagacacaact  
acgagctggacgaggccgtgacctgcag (SEQ ID NO: 82) ;

DPB1#5501 :

- 25 agaattacgtgcaccagtTcggcaggaatgctacgcgtttaatgggacacagcgcttcttgagagatatactta  
caaccgggaggagttcgTgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctgct  
gcggagttacttggaacagccagaaggacatcttgaggagGagcgggcagtgccggacaggatGtgcagacacaact

acgagctggacgaggccgtgacccigcag (SEQ ID NO: 8 3) ;

DPBI\*5601 :

gigtaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccaggagagatacatctacaaccggg  
aggagttcgcgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggccigcigcggagta  
5 cttggaacagccagaaggacCtccaggaggagaagcgggcagtgccggacagggtatgcagacacaactacgagctg  
gacgaggccgtgacccigcag (SEQ ID NO: 8 4) ;

DPBI\*5701 :

ctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccaggagagatacatctacaaccggg  
aggagttcgTcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggccigtatgaggaCta  
10 cttggaacagccagaaggacCtccaggaggagaagcgggcagtgccggacagggtatgcagacacaactacgagctg  
gacgaggccg (SEQ ID NO: 8 5) ;

DPBI\*5801 :

aattacgtgcaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccaggagagatacatctaca  
accgggaggagCtcgtgcgttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggccigcigc  
15 ggagttacttgaacagccagaaggacatccaggaggagGagcgggcagtgccggacaggatGtcagacacaactac  
gagctggacgaggccgtgacccigcag (SEQ ID NO: 8 6) ;

DPBI\*5901 :

agaattacctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccaggagagatacatctaca  
caaccgggaggagttcgtgcgttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggccigtat  
20 gAggagttacttgaacagccagaaggacCtccaggaggagaagcgggcagtgccggacaggatGtcagacacaact  
acgagctggGcgggcccattgacccigcag (SEQ ID NO: 8 7) ;

DPBI\*6001 :

agaattacctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccaggagagatacatctaca  
caaccgggaggagttcgtgcgttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggccigtat  
25 gaggagttacttgaacagccagaaggacaAccaggaggagaagcgggcagtgccggacaggatGtcagacacaact  
acgagctgggGgggcccattgacccigcag (SEQ ID NO: 8 8) ;

DPBI\*6101N :

agaattacgtgaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccaggagagatacatctacaaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgccctgatgaggactactggaacagccagaaggacctccctgTaggagaagcgggcagtgccggacagggtatgcagacacaactacgagctggacgaggccgtgacctgcagcgc (SEQ ID NO: 89) ;

## 5 DPB1\*6201 :

agaattaccititccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccaggagagatacatctacaaccgggaggagCtcgtgcgcttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgccctgctgaggaglaciggaacagccagaaggacatccctggaggagaagcgggcagtgccggacaggatGtcagacacaactacgagctggTcgggccaatgacctgcag (SEQ ID NO: 90) ;

## 10 DPB1\*6301 :

aattaccititccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccaggagagatacatctacaaccgggaggagCtcgtgcgcttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgccctgctgcggagtlactggaacagccagaaggacatccctggaggagaagcgggcagtgccggacaggatGtcagacacaactacgagctggacgaggccgtgacctgcag (SEQ ID NO: 91) ;

## 15 DPB1\*6401N :

aattaaagtgtaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccaggagagatacatctacaaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgccctgatgaggatCtactggaacagccagaaggacCtccctggaggagGagcgggcagtgccggacaggatGtcagacacaactacgagctggacgaggccgtgacctgcag (SEQ ID NO: 92) ;

## 20 DPB1\*6501 :

agaattaccititccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccaggagagatacatctacaaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgccctgctgaggagtlactggaacagccagaaggacatccctggaggagaagcgggcagtgccggacagggtatgcagacacaactacgagctggacgaggccgtgacctgcagccgag (SEQ ID NO: 93) ;

## 25 DPB1\*6601 :

agaattacgtgcaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccaggagagatacatctacaaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgccctgct

gcggagtactggaacagccagaaggacatccctggaggagaagcgggcagtgccggacaggatGtcagacacaact  
acgagctggGcggggcccatgacctgcagcgccgag (SEQ ID NO: 9 4) ;

DPBI\*6701 :

agaattacgtgcaccagTaccgcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
5 caaccgggaggagttcgTgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctgct  
gcggagtactggaacagccagaaggacCtccctggaggagaagcgggcagtgccggacagggtatgcagacacaact  
acgagctggacgaggccgtgacctgcagcgccgag (SEQ ID NO: 9 5) ;

DPBI\*6801 :

agaattacctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
10 caaccgggaggagttcgTgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctgat  
gAggagttactggaacagccagaaggacatccctggaggagaagcgggcagtgccggacagggtatgcagacacaact  
acgagctggacgaggccgtgacctgcagcgccga (SEQ ID NO: 9 6) ;

DPBI\*6901 :

agaattacgtgtaccagttaccgcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
15 caaccgggaggagttcgTgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctgat  
gaggaCtactggaacagccagaaggacctccctggaggagaGcgggcagtgccggacaggatgtgcagacacaact  
acgagctggacgaggccgtgacc (SEQ ID NO: 9 7) ;

DPBI\*7001 :

aattacgtggaccagttaccgcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatacttaca  
20 accgggaggagttcgTgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctgatga  
ggaCtactggaacagccagaaggacCtccctggaggagaagcgggcagtgccggacagggtatgcagacacaactac  
gagctggacgaggccgtgacctgcag (SEQ ID NO: 9 8) ;

DPBI\*7101 :

aattacctttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatacttaca  
25 accgggaggagttcgTgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctgctgc  
ggagtactggaacagccagaaggacatccctggaggagGagcgggcagtgccggacaggatGtcagacacaactac  
gagctggGcggggcccatgacctgcag (SEQ ID NO: 9 9) ;

DPB1\*7201 :

aattaccititccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccitggagagatacaictaca  
accgggaggagttcgcgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcgccctgctgc  
ggagttactggaacagccagaaggacCtccitggaggagaagcgggcagtgccggacaggatGtcagacacaactac.

5 gagctggGcgggcccattgacctgcag (SEQ ID NO: 1 0 0) ;

DPB1\*7301 :

aattaccititccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccitggagagatacaictaca  
accgggaggagttcgctgcgttcgacagcgacgtgggggagttccgggcggtagcggagctggggcgccctgatGA  
ggagttactggaacagccagaaggacCtccitggaggagaagcgggcagtgccggacagggtatgcagacacaactac

10 gagctggGcgggcccattgacctgcag (SEQ ID NO: 1 0 1) ;

DPB1\*7401 :

gtglaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccitggagagatacaictacaaccggC  
aggagttacgcgcgttcgacagcgacgtgggggagttccgggcggtagcggagctggggcgccctgctgcggagta  
ctggaacagccagaaggaccttccitggaggagaggcgggcagtgccggacaggatgtgcagacacaactacgagctg

15 gtccggcccAtgacctgcag (SEQ ID NO: 1 0 2) ;

DPB1\*7501 :

cititccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccitggagagatacaictacaaccggg  
aggagttcgTgcgttcgacagcgacgtgggggagttccgggcggtagcggagctggggcgccctgatGaggagta  
ctggaacagccagaaggacatcctggaggagaagcgggcagtgccggacagggtatgcagacacaactacgagctg

20 gGcgggcccattgacctgcag (SEQ ID NO: 1 0 3) ;

DPB1\*7601 :

agaattacgtgcaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccitggagagatacaicta  
caaccgggaggagttcgcgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcgccctgat  
gaggaCttactggaacagccagaaggacCtccitggaggagaagcgggcagtgccggacagggtatgcagacacaact

25 acgagctggacgaggccgtgacctgcag (SEQ ID NO: 1 0 4) ;

DPB1\*7701 :

agaattaccititccaggacTgcaggaatgctacgcgtttaatgggacacagcgcttccitggagagatacaicta

caaccgggaggagttcgtgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgat  
gaggagttactggaacagccagaaggacatccctggaggagaagcgggcagtgccggacaggatgtgcagacacaact  
acgagctgggcgggcccattgacctgcagcgccgag (SEQ ID NO: 105) ;

DPB1\*7801 :

- 5 agaattacgtgtaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaggagttcgtgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgat  
gaggacttactggaacagccagaaggacctccctggaggagaagcgggcagtgctggacagggtatgcagacacaact  
acgagctggacgaggccgtgacctgcagcgccgag (SEQ ID NO: 106) ;

DPB1\*7901 :

- 10 agaattacgtgtaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaggagttcgtgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgat  
gaggagttactggaacagccagaaggacatccctggaggagaagcgggcagtgccggacagggtatgcagacacaact  
acgagctggacgaggccgtgacctgcagcgccgag (SEQ ID NO: 107) ;

DPB1\*8001 :

- 15 agaattaccttttccagggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaggagttcgtgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgat  
gaggacttactggaacagccagaaggacatccctggaggagaagcgggcagtgccggacagggtatgcagacacaact  
acgagctgggcgggcccattgacctgcagcgccgag (SEQ ID NO: 108) ;

DPB1\*8101 :

- 20 agaattaccttttccagggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaggagttcgtgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgat  
gaggagttactggaacagccagaaggacatccctggaggagaagcgggcagtgccggacagggtatgcagacacaact  
acgagctggcgggcccattgacctgcagcgccgag (SEQ ID NO: 109) ;

DPB1\*8201 :

- 25 agaattaccttttccagggacggcaggaatgctacgcgtttaatgggacacagcgcttccctggagagatatactta  
caaccgggaggagttcgtgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgat  
gaggagttactggaacagccagaaggacatccctggaggagaagcgggcagtgccggacagggtatgcagacacaact

acgagctgggcgggcccAtgacccTgcagcAccgag(SEQ ID NO: 1 1 0) ;

DPBI\*8301 :

agaattaccTttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctta  
caaccgggaggagTtcgtgcgcttcgacagcgacTgggggagTtccgggcggTgacggagctggggcgccTgat

5 gaggagTactTggaacagccagaaggacTtccTggaggagaagcgggcagTgccggacaggatTgcagacacaact  
acgagctgggcgggcccAtgacccTgcagcgccgag(SEQ ID NO: 1 1 1) ;

DPBI\*8401 :

agaattaccTttccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctta  
caaccgggaggagTtcgtgcgcttcgacagcgacTgggggagTtccgggcggTgacggagctggggcgccTgaG

10 gAggagTactTggaacagccagaaggacatccTggaggagaagcgggcagTgccggacaggatTgcagacacaact  
acgagctggacgaggccgtgacccTgcagcgccga(SEQ ID NO: 1 1 2) ;

DPBI\*8501 :

agaattacgtgtaccagTtacggcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctta  
caaccgggaggagTtcgtgcgcttcgacagcgacTgggggagTtccgggcggTgacggagctggggcgccTgct

15 gcggagTactTggaacagccagaaggacatccTggaggagaagcgggcagTgccggacaggatTgcagacacaact  
acgagctggacgaggccgtgacccTgcagcAccgag(SEQ ID NO: 1 1 3) ;

DPBI\*8601 :

gaattacgtgtaccagTtacggcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctta  
aaccgggaggagTtcgtgcgcttcgacagcgacTgggggagTtccgggcggTgacggagctggggcgccTgalt

20 aggaCtactTggaacagccagaaggacatccTggaggagGagcgggcagTgccggacaggatTgcagacacaacta  
cgagctgggcgggcccAtgacccTgcagcgccga(SEQ ID NO: 1 1 4) ;

DPBI\*8701 :

agaattacgtgtaccagTtacggcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctta  
caaccgggaggagTtcgtgcgcttcgacagcgacTgggggagTtccgggcggTgacggagctggggcgccTgct

25 gcggagTactTggaacagccagaaggacCtccTggaggagaagcgggcagTgccggacaggatGtgcagacacaact  
acgagctggacgaggccgtgacccTgcagcgccgag(SEQ ID NO: 1 1 5) ;

DPBI\*8801 :



agaattacgtgtaccagtTaccggcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctta  
caaccgggaggagttcgTgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggccTgat  
gaggaCtactggaacagccagaaggacatccTggaggagGagcgggcagtgccggacagggtatgcagacacaact  
acgagctggacgaggccgtgacccTgcagcgccgag (SEQ ID NO: 116) ;

5 DPB1\*8901 :

agaattacgtgtaccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctta  
caaccgggaggagttacgcgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggccTgct  
gaggagttactggaacagccagaaggacatccTggaggagaagcgggcagtgccggacagggtatgcagacacaact  
acgagctggacgaggccgtgacccTgcagcgccgag (SEQ ID NO: 117) ;

10 DPB1\*9001 :

agaattacgtgtaccaggacggcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctta  
caaccgggaggagttcgTgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggccTgct  
gaggagttactggaacagccagaaggacatccTggaggagaagcgggcagtgccggacagggtatgcagacacaact  
acgagctggacgaggccgtgacccTgcagcgccgag (SEQ ID NO: 118) ;

15 DPB1\*9101 :

agaattacgtgtaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctta  
caaccgggaggagttcgTgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggccTgat  
gaggaCtactggaacagccagaaggacCtccTggaggagaagcgggcagtgccggacagggtatgcagacacaact  
acgagctggacgaggccgtgacccTgcagcgccgag (SEQ ID NO: 119) ;

20 DPB1\*9201 :

agaattacgtgtaccagtTaccggcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctta  
caaccgggaggagttcgTgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggccTgat  
gaggaCtactggaacagccagaaggacCtccTggaggagaagcgggcagtgccggacagggtatgcagacacaact  
acgagctggacgaggccgtgacccTgcagcgccgag (SEQ ID NO: 120) ;

25 DPB1\*9301 :

agaattacgtgtaccagtTaccggcaggaatgctacgcgtttaatgggacacagcgcttccTggagagatacatctta  
caaccgggaggagttcgTgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggccTgat

gAggagtagctggaacagccagaaggacatccaggaggagGagcgggcagtgccggacaggatGtgcagacacaact  
acgagctggacgaggccgtagacctgcagcgccgag (SEQ ID NO: 1 2 1) ;

DPB1\*9601 :

agaattaccltttccaggacggcaggaatgctacgcgtttaaaggacacagcgcttccaggagagatacatcta  
5 caaccgggaggagtagcgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcgcccgct  
gcggagtagctggaacagccagaagCacatccaggaggagaagcgggcagtgccggacaggatgtgcagacacaact  
acgagctgggcgggcccattgacctgcagcgccgag (SEQ ID NO: 1 2 2) ;

In the following, Probe lists DP1-DP4 are shown  
10 in Tables 13-1 to 13-3 and Tables 14-1 to 14-3  
respectively. Probe-Allele Lists DP1-4 are shown in  
Tables 15-1 to 15-5 and Tables 16-1 to 16-5.

Table 13-1

Probe No.	Base Sequence
0	acg cat aga cca aca ggG ( SEQ ID No: 123)
1	ag ttt atg ttt gaa ttt gat gaA ( SEQ ID No: 124)
2	t ctg gag gag ttt ggc cA ( SEQ ID No: 125)
3	g acg cat aga cca aca ggA ( SEQ ID No: 126)
4	g ttt atg ttt gaa ttt gat gaC ( SEQ ID No: 127)
5	cac act cag gcc gcc aaT ( SEQ ID No: 128)
6	ttc tat gtg gat ctg gat aaA ( SEQ ID No: 129)
7	ctg gag gag ttt ggc caa A ( SEQ ID No: 130)
8	ctg gag gag ttt ggc cG ( SEQ ID No: 131)
9	gcc gcg ttt gta cag acC ( SEQ ID No: 132)
10	t gaa ttt gat gaa gat gag cA ( SEQ ID No: 133)
11	ag ttc tat gtg gat ctg gaT ( SEQ ID No: 134)
12	g acc cat aga cca aca ggA ( SEQ ID No: 135)
13	t gcc atg ttt gta cag acC ( SEQ ID No: 136)
14	at gtg tca act tat gcc aT ( SEQ ID No: 137)
15	ctg gct aac att gct ata tC ( SEQ ID No: 138)
16	cat gtg tca act tat gcc aT ( SEQ ID No: 139)
17	aac aac aac ttg aat atc gcT ( SEQ ID No: 140)

Table 13-2

Probe No.	Base Sequence
0	gca gtg ccg gac agg G (SEQ ID No: 141)
1	ca gtg ccg gac agg gTA (SEQ ID No: 142)
2	tc gac agc gac gtg gGA (SEQ ID No: 143)
3	c aac cgg gag gag ttc gT (SEQ ID No: 144)
4	ctg ggg cgg cct gat gA (SEQ ID No: 145)
5	g gac atc ctg gag gag G (SEQ ID No: 146)
6	ca gtg ccg gac agg atG (SEQ ID No: 147)
7	a cac aac tac gag ctg gG (SEQ ID No: 148)
8	g ctg ggg cgg cct gaC (SEQ ID No: 149)
9	ag gag gag cgg gca gtT (SEQ ID No: 150)
10	ga tac atc tac aac cgg gaA (SEQ ID No: 151)
11	c tac aac cgg gag gag tT (SEQ ID No: 152)
12	c tac aac cgg gag gag C (SEQ ID No: 153)
13	g ctg ggg cgg cct gaG (SEQ ID No: 154)
14	gag ctg ggc ggg ccc A (SEQ ID No: 155)
15	ag aat tac gtg tac cag tT (SEQ ID No: 156)
16	gg cgg cct gat gag gaC (SEQ ID No: 157)
17	gg aac agc cag aag gac C (SEQ ID No: 158)
18	ac gag gcc gtg acc ctA (SEQ ID No: 159)
19	c tac aac cgg gag gag tT (SEQ ID No: 160)
20	aac cgg gag gag ctc gT (SEQ ID No: 161)
21	g gac ctc ctg gag gag G (SEQ ID No: 162)
22	ag aat tac gtg cac cag tT (SEQ ID No: 163)
23	aga tac atc tac aac cgg C (SEQ ID No: 164)
24	g gag aga tac atc tac aac A (SEQ ID No: 165)
25	g gca gtg ccg gac agg A (SEQ ID No: 166)
26	gag ctg gtc ggg ccc A (SEQ ID No: 167)
27	ga cac aac tac gag ctg gT (SEQ ID No: 168)
28	cc gtg acc ctg cag cgT (SEQ ID No: 169)
29	gg gca gtg ccg gac agA (SEQ ID No: 170)
30	g gag gag aag cgg gca T (SEQ ID No: 171)

Table 13-3

Probe No.	Base Sequence
31	ggg cgg cct gat gag gT (SEQ ID No: 172)
32	ga cgg cag gaa tgc tac C (SEQ ID No: 173)
33	gg aac agc cag aag gac T (SEQ ID No: 174)
34	g gac ttc ctg gag gag G (SEQ ID No: 175)
35	gg aac agc cag aag gac aA (SEQ ID No: 176)
36	gc cag aag gac ctc ctg T (SEQ ID No: 177)
37	gac ctc ctg gag gag aG (SEQ ID No: 178)
38	aat tac ctt ttc cag gga cT (SEQ ID No: 179)
39	gag aag cgg gca gtc cT (SEQ ID No: 180)
40	ccc atg acc ctg cag cA (SEQ ID No: 181)
41	tg ggg cgg cct gag gA (SEQ ID No: 182)
42	gcc gtg acc ctg cag cA (SEQ ID No: 183)
43	g aat tac gtg cac cag tT (SEQ ID No: 184)
44	ac tgg aac agc cag aag C (SEQ ID No: 185)

Table 14-1

Probe No.	Base Sequence
0	a cca aca ggG gag ttt atg ( SEQ ID No : 186)
1	gaa ttt gat gaA gat gag atg ( SEQ ID No : 187)
2	ag ttt ggc cAa gcc ttt tc ( SEQ ID No : 188)
3	ga cca aca ggA gag ttt atg ( SEQ ID No : 189)
4	gaa ttt gat gaC gat gag atg ( SEQ ID No : 190)
5	at ctg gat aaA aag gag acc ( SEQ ID No : 191)
6	ttt ggc caa Acc ttt tcc tt (i SEQ ID No : 192)
7	ag ttt ggc cGa gcc ttt tc (i SEQ ID No : 193)
8	t gta cag acC cat aga cca ( SEQ ID No : 194)
9	gaa gat gag cAg ttc tat gt ( SEQ ID No : 195)
10	cg ttt gta caA acc cat aga ( SEQ ID No : 196)
11	g gat ctg gaT aag aag gag ( SEQ ID No : 197)
12	act tat gcc aTg ttt gta cag ( SEQ ID No : 198)
13	att gct ata tCg aac aac aac ( SEQ ID No : 199)
14	g aat atc gcT atc cag cgt ( SEQ ID No : 200)

Table 14-2

Probe No.

Base Sequence

0	tAc cag gga cgg cag ga (SEQ ID No: 201)
1	ccg gac agg Gta tgc aga (SEQ ID No: 202)
2	g gac agg gta tgc aga ca (SEQ ID No: 203)
3	gac gtg gga gag ttc cg (SEQ ID No: 204)
4	at tac ctt tTc cag gga cg (SEQ ID No: 205)
5	g gag ttc gTg cgc ttc g (SEQ ID No: 206)
6	gg cct gat gAg gag tac t (SEQ ID No: 207)
7	g gag gag Gag cgg gca (SEQ ID No: 208)
8	g gac agg atG tgc aga ca (SEQ ID No: 209)
9	gag ctg gGc ggg ccc (SEQ ID No: 210)
10	cgg cct gaC gag gag ta (SEQ ID No: 211)
11	cgg gca gtT ccg gac ag (SEQ ID No: 212)
12	c aac cgg gaA gag ttc gt (SEQ ID No: 213)
13	g gag gag ttT gtg cgc tt (SEQ ID No: 214)
14	g gag gag Ctc gtg cgc (SEQ ID No: 215)
15	cgg cct gaG gcg gag t (SEQ ID No: 216)
16	c ggg ccc Atg acc ctg (SEQ ID No: 217)
17	tg tac cag tTa cgg cag g (SEQ ID No: 218)
18	t gat gag gaC tac tgg aac (SEQ ID No: 219)
19	cag aag gac Ctc ctg gag (SEQ ID No: 220)
20	gtg acc ctA cag cgc cg (SEQ ID No: 221)
21	g gag gag tTc gcg cgc (SEQ ID No: 222)
22	g gag ctc gTg cgc ttc g (SEQ ID No: 223)
23	aat tac gtg Cac cag tta cg (SEQ ID No: 224)
24	tac aac cgg Cag gag tac (SEQ ID No: 225)
25	atc tac aac Agg cag gag t (SEQ ID No: 226)
26	ccg gac agg Ata tgc aga (SEQ ID No: 227)
27	c gag ctg gTc ggg ccc (SEQ ID No: 228)
28	g ccg gac agA gta tgc ag (SEQ ID No: 229)
29	g cac cag tTa cgg cag g (SEQ ID No: 230)
30	g cgg gca Ttg ccg gac (SEQ ID No: 231)

Table 14-3

Probe No.	Base Sequence
31	ct gat gag gTg tac tgg aa (SEQ ID No: 232)
32	gaa tgc tac Ccg ttt aat gg (SEQ ID No: 233)
33	cag aag gac Ttc ctg gag (SEQ ID No: 234)
34	ag aag gac aAc ctg gag g (SEQ ID No: 235)
35	gac ctc ctg Tag gag aag (SEQ ID No: 236)
36	g gag gag aGg cgg gca (SEQ ID No: 237)
37	g gac cag tTa cgg cag g (SEQ ID No: 238)
38	tc cag gga cTg cag gaa t (SEQ ID No: 239)
39	g gca gtg cTg gac agg g (SEQ ID No: 240)
40	g ctg ggc gGg ccc atg (SEQ ID No: 241)
41	cgg cct gaG gag gag ta (SEQ ID No: 242)
42	gg cct gag gAg gag tac t (SEQ ID No: 243)
43	agc cag aag Cac atc ctg (SEQ ID No: 244)



Table 15-1

Allele Number		Probe Number for Detection			
DPA1*010301	0	1	2		
DPA1*010302	3				
DPA1*0104	4				
DPA1*0105	5				
DPA1*0106	6				
DPA1*0107	7				
DPA1*0108	4	8			
DPA1*020101	9	6	5		
DPA1*020102	6	5			
DPA1*020103	10	5			
DPA1*020104	6	5			
DPA1*020105	3	10	5		
DPA1*020106	9	11	5		
DPA1*020201	12	11	5		
DPA1*020202	13	12	10	5	
DPA1*020203	14	5			
DPA1*0203	9	5			
DPA1*0301	15				
DPA1*0302	16				
DPA1*0401	17				

Table 15-2

Allele Number		Probe Number for Detection				
DPB1*010101	0	1				
DPB1*010102	2					
DPB1*020102	3	4	5	6	7	
DPB1*020103	8					
DPB1*020104	9					
DPB1*020105	10					
DPB1*020106	11					
DPB1*0202	12	13	5	14		
DPB1*030101	15	3	16	17		
DPB1*030102	18					
DPB1*0401	19	6	7			
DPB1*0402	3	4	6	7		
DPB1*0501	12	20	13	6		
DPB1*0601	16	17	21	6		
DPB1*0801	3	4	5			
DPB1*0901	22	16	5			
DPB1*1001	22	3	4	5		
DPB1*110101	23					
DPB1*110102	24					
DPB1*1301	15	5	25			
DPB1*1401	22	3	16	17		
DPB1*1501	23	26				
DPB1*1601	3	4	5	6		
DPB1*1701	22	16	5	6		
DPB1*1801	3	4	27			
DPB1*1901	13	5	25			
DPB1*200101	16	17	6			
DPB1*200102	28					
DPB1*2101	15	12	13	5	6	
DPB1*2201	12	13	5	6		

Table 15-3

Allele Number	Probe Number for Detection				
DPB1*2301	3	6	7		
DPB1*2401	13	14			
DPB1*2501	15	3	4	17	
DPB1*260101	29				
DPB1*2701	15	6			
DPB1*2801	4	17	27		
DPB1*2901	16	17	21		
DPB1*3001	22	13	5	6	
DPB1*3101	30				
DPB1*3201	31				
DPB1*3301	5	6	7		
DPB1*3401	30	26			
DPB1*3501	22	3	16		
DPB1*3601	15	12	20	13	6
DPB1*3701	3	4	5		
DPB1*3801	32				
DPB1*3901	6	7			
DPB1*4001	27				
DPB1*4101	33	34			
DPB1*4401	12	17	21		
DPB1*4501	3	4	17		
DPB1*4601	16	5	14		
DPB1*4701	13	5	14		
DPB1*4801	12	4	7	14	
DPB1*4901	4	6	7		
DPB1*5001	3	16	17		
DPB1*5101	19	4	6	7	
DPB1*5201	15	3	17		
DPB1*5301	4	27			
DPB1*5401	22	13	5		

Table 15-4

Allele Number		Probe Number for Detection			
DPB1*5501	22	3	5	6	
DPB1*5601	19	17			
DPB1*5701	3	16	17		
DPB1*5801	12	5	6		
DPB1*5901	4	17	6	7	
DPB1*6001	35				
DPB1*6101N	36				
DPB1*6201	12	20	27		
DPB1*6301	12	6			
DPB1*6401N	16	17	21	6	
DPB1*6601	22	19	6	7	
DPB1*6701	22	3	17		
DPB1*6801	3	4			
DPB1*6901	16	37			
DPB1*7001	3	16	17		
DPB1*7101	3	5	6	7	
DPB1*7201	17	6	7		
DPB1*7301	4	17	7		
DPB1*7401	23	26			
DPB1*7501	3	4	7		
DPB1*7601	22	16	17		
DPB1*7701	38				
DPB1*7801	39				
DPB1*7901	15	3	4		
DPB1*8001	16	14			
DPB1*8101	4	5	6	7	
DPB1*8201	14	40			
DPB1*8301	33				
DPB1*8401	13	41			
DPB1*8501	15	42			

Table 15-5

Allele Number	Probe Number for Detection				
DPB1*8601	43	16	5	14	
DPB1*8701	15	3	17	6	
DPB1*8801	15	16	5		
DPB1*8901	6				
DPB1*9001	19				
DPB1*9101	16	17	6		
DPB1*9201	15	16	17		
DPB1*9301	15	3	4	5	6
DPB1*9601	44				

Table 16-1

Allele Number	Probe Number for Detection			
DPA1*010301	0	1	2	
DPA1*010302	3			
DPA1*0104	4			
DPA1*0106	5			
DPA1*0107	6			
DPA1*0108	4	7		
DPA1*020101	8	5	7	
DPA1*020102	5	7		
DPA1*020103	9	7		
DPA1*020104	10			
DPA1*020105	3	9	7	
DPA1*020106	8	11	7	
DPA1*020201	3	11	7	
DPA1*020202	8	3	9	7
DPA1*020203	12	7		
DPA1*0203	8	7		
DPA1*0301	13			
DPA1*0302	12			
DPA1*0401	14			

Table 16-2

Allele Number	Probe Number for Detection					
DPB1*010101	0	1	2			
DPB1*010102	3					
DPB1*020102	4	5	6	7	8	9
DPB1*020103	10					
DPB1*020104	11					
DPB1*020105	12					
DPB1*020106	13					
DPB1*0202	14	15	7	16		
DPB1*030101	17	5	18	19		
DPB1*030102	20					
DPB1*0401	4	21	8	9		
DPB1*0402	4	5	6	8	9	
DPB1*0501	4	14	22	15	8	
DPB1*0601	18	19	7	8		
DPB1*0801	5	6	7			
DPB1*0901	23	18	7			
DPB1*1001	23	6	7			
DPB1*110101	17	24				
DPB1*110102	25					
DPB1*1301	17	7	26			
DPB1*1401	23	5	18	19		
DPB1*1501	24	16				
DPB1*1601	4	5	6	7	8	
DPB1*1701	23	18	7	8		
DPB1*1801	5	6	27			
DPB1*1901	4	15	7	26		
DPB1*200101	18	19	8			
DPB1*200102	18	19	8			

Table 16-3

Allele Number	Probe Number for Detection				
DPB1*2101	17	14	15	7	8
DPB1*2201	4	14	15	7	8
DPB1*2301	4	5	8	9	
DPB1*2401	15	16			
DPB1*2501	17	5	6	19	
DPB1*260101	28				
DPB1*260102	17				
DPB1*2701	17	8			
DPB1*2801	6	19	27		
DPB1*2901	18	19	7		
DPB1*3001	23	29	15	7	8
DPB1*3101	30				
DPB1*3201	31				
DPB1*3301	4	7	8	9	
DPB1*3401	30	16			
DPB1*3501	23	5	18		
DPB1*3601	17	14	22	15	8
DPB1*3701	17	5	6	7	
DPB1*3801	32				
DPB1*3901	4	8	9		
DPB1*4001	4	27			
DPB1*4101	33	7			
DPB1*4401	14	19	7		
DPB1*4501	29	5	6	19	
DPB1*4601	4	18	7	16	
DPB1*4701	15	7	16		
DPB1*4801	14	6	9	16	
DPB1*4901	6	8	9		
DPB1*5001	5	18	19		
DPB1*5101	4	21	6	8	9



Table 16-4

Allele Number	Probe Number for Detection				
DPB1*5201	17	5	19		
DPB1*5301	4	6	27		
DPB1*5401	23	29	15	7	
DPB1*5501	23	7	8		
DPB1*5601	17	21	19		
DPB1*5701	5	18	19		
DPB1*5801	29	14	7	8	
DPB1*5901	6	19	8	9	
DPB1*6001	34				
DPB1*6101N	35				
DPB1*6201	14	22	27		
DPB1*6301	14	8			
DPB1*6401N	18	19	7	8	
DPB1*6501	4				
DPB1*6601	23	16			
DPB1*6701	23	5	19		
DPB1*6801	4	5	6		
DPB1*6901	18	36			
DPB1*7001	37	5	18	19	
DPB1*7101	5	7	8	9	
DPB1*7201	19	8	9		
DPB1*7301	6	19	9		
DPB1*7401	17	24	16		
DPB1*7501	5	6	9		
DPB1*7601	23	18	19		
DPB1*7701	38				
DPB1*7801	39				
DPB1*7901	17	5	6		
DPB1*8001	4	18	40		
DPB1*8101	4	6	7	8	9

Table 16-5

Allele Number	Probe Number for Detection				
	4	5	6	8	9
DPB1*8201	4				
DPB1*8301	33				
DPB1*8401	41	42			
DPB1*8501	17	8			
DPB1*8601	23	7	16		
DPB1*8701	17	5	19	8	
DPB1*8801	17	18	7		
DPB1*8901	8				
DPB1*9001	21				
DPB1*9101	23	19	8		
DPB1*9201	17	18	19		
DPB1*9301	17	5	6	7	8
DPB1*9601	43				

(Example 9)

Probes for identification of HLA-DQ allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification  
5 Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe lists DQ1A and DQ1B were used and 2  $\mu$ l of the  
10 mixed primers consisting of 1  $\mu$ l each of respective solutions of the following primers (10 pmol/ $\mu$ l) and 6  $\mu$ l of ultra pure water were used:

GGTGAGGTAAGTATCTTG (SEQ ID NO: 165)

TCCTTCTGGCTGTTCCAGTACTC (SEQ ID NO: 166).

15 After PCR amplification, referring to Amp Plot and Dissociation curves on a display of 5700 software, and to the allele-probe list (Table 19A, 19B-1 and 19B-2), it was identified as DQA1\*0103 and DQB1\*060101.

20 (Example 10)

Extraction of DNA from 1 ml of human blood was performed in the same way as in Example 3. PCR of human HLA-DQ was then performed in the same manner as in Example 2 except that 3  $\mu$ l of the mixed primer  
25 consisting of 1  $\mu$ l each of the solutions containing the following sequences at 10 pmol/ $\mu$ l respectively, and 12  $\mu$ l of ultra pure water were used:

GGTGAGGTAAGTATCTTG (SEQ ID NO: 165)

ATGATCCTAAACAAAGCTCTG (SEQ ID NO: 167)

TGTGCTACTTCACCAACGGGACG (SEQ ID NO: 168).

At the same time, a DNA microarray was prepared  
5 to identify the allele in the specimen described  
above in the same manner as in Example 2, except that  
probes in the probe list of Tables 18A, 18B-1 and  
18B-2 were used to form the probe spots respectively.

Then, hybridization was performed using the  
10 above specimen and the prepared DNA microarray in the  
same manner as in Example 2. Fluorometry measurement  
was conducted with GenePix4000B (Axon). Referring to  
the allele-probe list (Tables 20A, 20B-1 and 20B-2),  
it was identified as DQA1\*0103 and DQB1\*060101.

15

#### Allele list

DQA1\*010101

atgatcctaaacaaagcctcgtcgtggggccctcgctcgtaccaccgtgatgagccccgtggagggaagaca  
ttgtggcgtaccacgttgccctcgtgggtgtaacctgtaccagttttacggccccctggccagtaacccaatga  
20 attgatggagatgagGagttctacgtggacctggagaggaaggagactgccgtggcgtggcctgagttcagcaaa  
tttggagggtttgaccgcgagggtgcactgagaaacatggcgtggcgaacacacaacttgaacatcatgattaaac  
gctacaactctaccgtcgtaccaatgaggttcctgaggtaacagttttccaagctcccgtagacatgggtca  
gccaacacccctcatlgtcttgggacaacatccttccctcgtggtaacatcacatggcgtagcaatgggcag  
tcagtcacagaagggtttctgagaccagcttccctccaagagtgatcatccttcttcaagatcagttacctca  
25 ccttcttcccttctcgtgatgagatttatgactgcaagggtggagcacgtggggcctggaccagcccttcttgaaca  
cgtgggagcctgagattccagccccatgtcagagctcacagagactgtggctcgcgccctgggggtgtctgtgggc  
ctcgtgggcattgtgggtgggcactgtcttcatcatccaaggcctgcgttcagttgggtgttccagacaccaagggc

catlgtga (SEQ ID NO:169)

DQA1\*010102

atgatcctaaacaaagctcigcigcigggggccctcgctcigaccaccgtagagccccigtggaggigaagaca  
tltggcigaccacgttgcctcigtggigtaaacigtaccagttttacggccccctggccaglacaccaatga  
5 attgatggagatgaggagttctacgtggacciggagaggaaggagacigcciggcggiggccigagttcagcaaa  
tltggaggitttgacccgcagggtgcacigagaacaatggcigtggcaaacacacaactlgaacatcatgattaaac  
gctacaactctaccgctgctaccaatgaggltccigaggtcacagtggtttccaagctccccgtgacacigggtca  
gccaacacccctcatlgtcigtggacaacatcttccctcctgggtcaacatcacatggcigagcaatgggcag  
tcagtcacagaaggltgtctgagaccagcttccctccaagagtatcatlccctctcaagatcagttacctca  
10 ccttccctccctctgctgatgagattatgactgcaaggiggagcaciggggcctggaccagccctctctgaaaca  
ctgggagccigagattccagccccatgtcagagctcacagagacigtggctcgcgcccggggltgtcigtgggc  
ctcgtgggcattgtggigggcacigtcttcaatccaaggccgcgttcagttgggtgtccagacaccaGgggc  
catlgtga (SEQ ID NO:170)

DQA1\*010201

15 atgatcctaaacaaagctcigcigcigggggccctcgctcigaccaccgtagagccccigtggaggigaagaca  
tltggcigaccacgttgcctcigtggigtaaacigtaccagttttacggccccctggccaglacaccaatga  
attgatggagatgagcagttctacgtggacciggagaggaaggagacigcciggcggiggccigagttcagcaaa  
tltggaggitttgacccgcagggtgcacigagaacaatggcigtggcaaacacacaactlgaacatcatgattaaac  
gctacaactctaccgctgctaccaatgaggltccigaggtcacagtggtttccaagctccccgtgacacigggtca  
20 gccaacacccctcatlgtcigtggacaacatcttccctcctgggtcaacatcacatggcigagcaatgggcag  
tcagtcacagaaggltgtctgagaccagcttccctccaagagtatcatlccctctcaagatcagttacctca  
ccttccctccctctgctgatgagattatgactgcaaggiggagcaciggggcctggaccagccctctctgaaaca  
ctgggagccigagattccagccccatgtcagagctcacagagacigtggctcgcgcccggggltgtcigtgggc  
ctcAtgggcattgtggigggcacigtcttcaatccaaggccgcgttcagttgggtgtccagacaccaagggc

25 catlgtga (SEQ ID NO:171)

DQA1\*010202

atgatcctaaacaaagctcigcigcigggggccctcgctcigaccaccgtagagccccigtggaggigaagaca

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atttgaaggagatgagcagttctacgtggaccggagaggaaggagacigccggcggtggccaggtcagcaaa  
tttggaggttttgacccgcagggtgcactgagaaacatggctgtggcaaaacacaacttgaacatcatgattaaac  
gttacaactctaccgtgctaccaatgagggtccctgagggtcacagtggtttccaagctctccgtgacactgggtca  
5 gccaacacccctcatctgtctgtggacaacatctttccctccgtgggtcaacatcacatggctgagcaatgggcag  
tcagtcacagaagggtgttctgagaccagcttccctccaagagtgaatcatctcttcaagatcagttacctca  
ccttccctcccttctgtctgagatgagatttatgactgcaagggtggagcacggggccggaccagcccttctgaaaca  
ctgggagccctgagatccagccctatgtcagagctcacagagactgtggctgtgcccggggtgtctgtgggc  
ctcAagggcattgtgggtgggcactgtcttcatcatccaaggccctgcgttcagttgggtgttccagacaccaagggc  
10 cattgtga (SEQ ID NO:172)

DQA1\*0103

atgatcctaacaagaagctctgtctgtggggccctcgctctgaccaccgtgatgagccctgtggaggatgaagaca  
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atttgaaggagatgagcagttctacgtggaccggagaagaaggagacigccggcggtggccaggtcagcaaa  
15 tttggaggttttgacccgcagggtgcactgagaaacatggctgtggcaaaacacaacttgaacatcatgattaaac  
gttacaactctaccgtgctaccaatgagggtccctgagggtcacagtggtttccaagctctccgtgacactgggtca  
gccaacacccctcatctgtctgtggacaacatctttccctccgtgggtcaacatcacatggctgagcaatgggcac  
Gcagtcacagaagggtgttctgagaccagcttccctccaagagtgaatcatctcttcaagatcagttacctca  
ccttccctcccttctgtctgagatgagatttatgactgcaagggtggagcacggggccggaccagcccttctgaaaca  
20 ctgggagccctgagatccagccctatgtcagagctcacagagactgtggctgtgcccggggtgtctgtgggc  
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ccttgtga (SEQ ID NO:173)

DQA1\*010401

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25 ttgtggctgaccacgttgccctctgtgggtglaaacttgaccagttttacgggccctctggccaglacaccaatga  
atttgaaggagatgaggagttctacgtggaccggagaggaaggagacigccggcggtggccaggtcagcaaa  
tttggaggttttgacccgcagggtgcactgagaaacatggctgtggcaaaacacaacttgaacatcatgattaaac

gctacaactctaccgctgctaccaatgaggttccctgaggctcacagtggtttccaagctccccgtgacacgggtca  
gccaacacccctcatttgctctgtggacaacatcttccctccctgtggcaacatcacatggctgagcaatgggcag  
tcagtcacagaagggtgttctgagaccagcttccctccaagagtgaatcattcttcaagatcagttacctca  
ccctccctccctctgctgatgagattatgactgcaagggtggagcacggggccctggaccagccctctctgaaaca  
5 ctgggagccctgagatccagccccatgtcagagctcacagagactgtggctcgcAccctgggggtgtctgtgggc  
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cattgtga (SEQ ID NO:174)

DQA1\*010402

atgatccctaaacaaagctctgctgctgggggcccctgcctctgaccaccatgatgagccccctgtggaggatgaagGca  
10 ttgtggctgaccacgttgcctctgtgggtgtaaactgtaccagttttacggctccctctggccagttacaccaatga  
atttgatggagatgaggagttctacgtggaccctggagaggaaggagactgccctggcgggtggccctgagttcagcaaa  
tttggagggtttgaccgcagggtgcactgagaaacatggctgtggcaaaacacaacttgaacatcatgatataaac  
gctacaactctaccgctgctaccaatgaggttccctgaggctcacagtggtttccaagctccccgtgacacgggtca  
gccaacacccctcatttgctctgtggacaacatcttccctccctgtggcaacatcacctggctgagcaatgggcag  
15 tcagtcacagaagggtgttctgagaccagcttccctccaagagtgaatcattcttcaagatcagttacctca  
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ctggg (SEQ ID NO:175)

DQA1\*0105

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20 ttgtggctgaccacgttgcctctgtgggtgtaaactgtaccagttttacggctccctctggccagttacaccaatga  
atttgatggagatgaggagttctacgtggaccctggagaggaaggagactgccctggcgggtggccctgagttcagcaaa  
tttggagggtttgaccgcagggtgcactgagaaacatggctgtggcaaaacacaacttgaacatcatgatataaac  
gctacaactctaccgctgctaccaatgaggttccctgaggctcacagtggtttccaagctccccgtgacacgggtca  
gccaacacccctcatttgctctgtggacaacatcttccctccctgtggcaacatcacatggctgagcaatgggcag  
25 tcagtcacagaagggtgttctgagaccagcttccctccaagagtgaatcattcttcaagatcagttacctca  
ccctccctccctctgctgatgagattatgactgcaagggtggagcacggggccctggaccagccctctctgaaaca  
ctgggagccctgagatccagccccatgtcagagctcacagagactgtggctcgcggccctgggtgtctgtgggc

ctcgtgggcatlgtgggggcacgtgcttcaatcaatcaagccctgcgttcagltgggtgttccaga (SEQ ID NO:176)

DQA1\*0106

ctgaccacgttgccctctgtgggtgtaaactgtaccagttttacggccccctggccaglacaccaatgaattga  
5 tggagatgagcagttctacgtggaccctggagaggaaggagGctgccctggcgggtggccctgagttcagcaaatltgga  
ggttltgacccgcagggtgcactgagaaacalggctgtggcaaacacaaactgaacalcatgattaaacgttaca  
actctaccgtgtctaccaatg (SEQ ID NO:177)

DQA1\*0201

atgatcctaaacaaagctctgatgctggggggccccgccccgaccaccgtgatgagccctltggaggatgaagaca  
10 ttgtggctgaccacgttgccctctacgggtgtaaactgtaccagttctacggccccctggccagttcacccaatga  
aattgatggagacgaggagttctatgtggaccctggagaggaaggagactgtctgggaagttgccctctgttccacaga  
Cttaga...ttgacccgcaatttgcactgacaaacatcgctgtgctaaaacataactgaacalctgtataaac  
gtctcaactctaccgtgtctaccaatgaggttccctgagggtcacagtggtttccaagcttcccgtagacactgggtca  
gccaacacccctcatctgtcttgggacaacatcttccctcttgggtcaacatcacctggctgagcaatgggcac  
15 tcagtcacagaagggtgttctgagaccagcttcccttccaagagtgaatcttcttcaagatcagttacctca  
ccttccctcccttctgtgtatgagatttatgactgcaagggtggagcacctggggccctggatgagcccttcttgaaaca  
ctgggagccctgagatccagcacctatgtcagagctcacagagactgtggctctgtgccccgggggtgtctgttgggc  
ctcgtgggcatlgtgggtggggaccgtcttgatcatccgaggccctgcgttcagltgggtgttccagacaccaagggc  
ccttgtga (SEQ ID NO:178)

20 DQA1\*030101

atgatcctaaacaaagctctgatgctggggggccccgccccgaccaccgtgatgagccctltggaggatgaagaca  
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aattgatggagacgaggagttctatgtggaccctggagaggaaggagactgtctggcagttgccctctgttccgcaga  
ttitagaagatttggacccgcaatttgcactgacaaacatcgctgtgctaaaacataactgaacalctgtataaac  
25 gtctcaactctaccgtgtctaccaatgaggttccctgagggtcacagtggtttccaagcttcccgtagacactgggtca  
gccaacacccctcatctgtcttgggacaacatcttccctcttgggtcaacatcacctggctgagcaatgggcac  
tcagtcacagaagggtgttctgagaccagcttcccttccaagagtgaatcttcttcaagatcagttacctca



ccctccctccctctcgtgatgagattatgactgcaaggtaggagcacaggccctggatgagccctctcigaaca  
ctgggagccctgagatccaAcacctatgicagagctcacagagactggtgctgcgcccggggctgctctgggc  
ctcgtgggcatctgggggggaccgctctgaltcatccgaggcccgctcagctgggtgctccagacaccaagggc  
ccctgtga (SEQ ID NO:179)

## 5 DQA1\*0302

atgatccaaacaaagctctgaltgctggggggccctcgcccagaccaccgtgaCgagccctctggagggaagaca  
ctgggtgacctgctgctctacgggtgaaactgtaccagctctatggctccctcgggcagctacagccatga  
attgatggagacgaggagctctatgtggaccctggagaggaaggagactgctggcagctgctcctgctccgcaga  
cttgaagattgacctgcaattgacactgacaaacatcgctgtgctaaaacataactgaacatcgtgattaaac  
10 gctccaactctaccgctgctaccaatgaggtctctgaggtcacaggtcttccaagctcccgtagacctgggtca  
gccaacacccctcatctgctctgggacaacatcttccctcctgggtcaacatcaccctggctgagcaatgggcac  
tcagctcacagaagggtctctgagaccagctctctctccaagagtgaatctctctcaagatcagttacctca  
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ctgggagccctgagatccaacacctatgicagagctcacagagactggtgctgcgcccggggctgctctgggc  
15 ctcgtgggcatctgggggggaccgctctgaltcatccgaggcccgctcagctgggtgctccagacaccaagggc  
ccctgtga (SEQ ID NO:180)

## DQA1\*0303

atgatccaaacaaagctctgaltgctggggggccctcgcccagaccaccgtgaCgagccctctggagggaagaca  
ctgggtgacctgctgctctacgggtgaaactgtaccagctctatggctccctcgggcagctacagccatga  
20 attgatggagacgaggagctctatgtggaccctggagaggaaggagactgctggcagctgctcctgctccgcaga  
cttgaagattgacctgcaattgacactgacaaacatcgctgtgctaaaacataactgaacatcgtgattaaac  
gctccaactctaccgctgctaccaatgaggtctctgaggtcacaggtcttccaagctcccgtagacctgggtca  
gccaacacccctcatctgctctgggacaacatcttccctcctgggtcaacatcaccctggctgagcaatgggcac  
tcagctcacagaagggtctctgagaccagctctctctccaagagtgaatctctctcaagatcagttacctca  
25 ccctccctccctctcgtgatgagattatgactgcaaggtaggagcacaggccctggatgagccctctcigaaca  
ctgggagccctgagatccaacacctatgicagagctcacagagactggtgctgcgcccggggctgctctgggc  
ctcgtgggcatctgggggggaccgctctgaltcatccgaggcccgctcagctgggtgctccagacaccaagggc

cccttgta (SEQ ID NO:181)

DQA1\*040101

a t g a l c c t a a c a a a g c t c t g c t g c t g g g g c c c t t g c c c t g a c c a c c g t g a t g a g c c c c t g t g g a g g i g a a g a c a  
t t g t g g c t g a c c a t g t t g c c t c t t a t g g t g t a a a c t t g t a c c a g i c t t a c g g t c c c t c t g g c c a g t a c a c c c a t g a  
5 a t t g a t g g a g a c g a g c a g t t c t a c t g g a c c t g g g g a g a a g g a g a c t g t c t g g t g t t t g c c t g t t c t a g a c a a  
t t t a g a . . . t t t g a c c c g c a a t t t g c a c t g a c a a a c a t c g c t g t g a c a a a a c a c a a c t t g a a c a t c c t g a t t a a a c  
g c t c c a a c t c t a c T g c t g c t a c c a a t g a g g t t c c t g a g g t c a c a g t g t t t c c a a g t c t c c c g t g a c g c t g g g t c a  
g c c c a a c a c c c t c a t c t g t c t t g t g g a c a a c a t c t t t c c t c c t g t g g t c a a c a t c a c a t g g c t g a g c a a t g g g c a c  
t c a g t c a c a g a a g g i g t t t c t g a g a c c a g c t t c c t c t c c a a g a g t g a t c a t t c c t t c t t a a g a t c a g t t a c c t c a  
10 c c t t c c t c c c t c t g c t g a t g a g a t t t a t g a c t g c a a g g t g g a g c a c t g g g g c c t g g a c g a g c c t c t t c t g a a a c a  
c t g g g a g c c t g a g a t t c c a g c c c c t a t g t c a g a g c t c a c a g a g a c t g t g g t c t g c g c c c t g g g a t t g t c t g t g g g c  
c t c g t g g g c a t t g t g g t g g g c a c t g t c t t c a t c a t c c g a g g c c t g c g t t c a g t t g g t g c t t c c a g a c a c c a a g g g c  
c C t t g t a (SEQ ID NO:182)

DQA1\*040102

15 c t g a c c a t g t t g c c t c t t a t g g t g t a a a c t t g t a c c a g i c t t a c g g t c c c t c t g g c c a g t a c a c c c a t g a a t t t g a  
t g g a g a c g a g c a g t t c t a c t g g a c c t g g g g a g a a g g a g a c t g t c t g g t g t t t g c c t g t t c t a g a c a a t t t a g a  
... t t t g a c c c g c a a t t t g c a c t g a c a a a c a t c g c t g t g a c a a a c a c a a c t t g a a c a t c c t g a t t a a a c g c t c c a  
a c t c t a c t g c t g c t a c c a a t g a g g t t c c t g a g g t c a c a g t g t t t c c a a g t c t c c T g t g a c g c t g g g t c a g c c c a a  
c a c c c t a c t c t g t c t t g t g g a c a a c a t c t t t c c t c c t g t g g t c a a c a t c a c a t g g c t g a g c a a t g g g c a c t c a g t c  
20 a c a g a a g g i g t t t c t g a g a c c a g c t t c c t c t c c a a g a g t g a t c a t t c c t t c t t a a g a t c a g t t a c c t c a c c t t c c  
t c c c t t c t g c t g a t g a g a t t t a t g a c t g c a a g g t g g a g c a c t g g g g c c t g g a c g a g c c t c t t c t g a a a c a c t g g g (

SEQ ID NO:183)

DQA1\*050101

a t g a l c c t a a c a a a g c t c t g a t g c t g g g g c c c t t g c c c t g a c c a c c g t g a t g a g c c c c t g t g g a g g i g a a g a c a  
25 t t g t g g c t g a c c a c t c g c c t c t t a t g g t g t a a a c t t g t a c c a g i c t t a c g g t c c c t c t g g c c a g t a c a c c c a t g a  
a t t g a t g g a g a l g a g c a g t t c t a c t g g a c c t g g g g a g a a g g a g a c t g t c t g g t g t t t g c c t g t t c t a g a c a a  
t t t a g a . . . t t t g a c c c g c a a t t t g c a c t g a c a a a c a t c g c t g t c c t a a a c a t a a c t t g a a c a g t c t g a t t a a a c

gcaccaacictaccgctgctaccaalgaggctccctgaggcacagtgcttccaagctccccgacacgggtca  
gccaacatccctacictgctctgaggacaacatcttccctccctgggtcaacatcacatggctgagcaatgggcac  
tcagtcacagaagggtgttctgagaccagcttccctccaagagtatcatcttctcaagatcagttacctca  
cccctctcccttctgctgaggagagttatgactgcaaggaggagcacggggccggacAagcccttctgaaaca  
5 ctgggagccctgagatccagccccctatgtcagagctcacagagacgtgggtctgcgccctgggAtgtctgtgggc  
ctctggggcatgtggggggcacgtgtctcatcatccgaggccctgcgttcagttgggtgttccagacaccaagggc  
ccttgtga (SEQ ID NO:184)

DQA1\*050102

gaagacatgtggctgaccacgttgcccttAtgggttaaactgtaccagctctacggctcccctggccagttaca  
10 cccatgaatttgatggagatgagcagttctacgtggacctggggaggaaggagacgtctgggtgttggcgttct  
cagacaattttaga...tttgaccgcaatttgcactgacaacatcgctgtctctaaaacataacttgaacagTctg  
attaaacgctccaacictaccgctgctaccaat (SEQ ID NO:185)

DQA1\*0502

gggttaaactgtaccagctctacggctcccctggccagttacacccatgaatttgatggagatgagcagttctacg  
15 tggacctggggaggaaggagacgtctgggtgttggcgttctcagacaattttaga...tttgaccGgcaatttgc  
actgacaacatcgctgtctctaaaacataacttgaacagcttgattaaacgctccaacictaccgctgctacc (SE  
Q ID NO:186)

DQA1\*0503

atgatcttaacaaagctctgatgtggggcccttgccctgaccaccgtgatgagccccctgggaggigaagaca  
20 ttgtggctgaccacgttgcccttAtgggttaaactgtaccagctctacggctcccctggccagttacacccatga  
atttgatggagatgagcagttctacgtggacctggggaggaaggagacgtctgggtgttggcgttctcagacaa  
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gccaacatccctacictgctctgaggacaacatcttccctccctgggtcaacatcacatggctgagcaatgggcac  
25 tcagtcacagaagggtgttctgagaccagcttccctccaagagtatcatcttctcaagatcagttacctca  
cccctctcccttctTctgaggagagttatgactgcaaggaggagcacggggccggacaagcccttctgaaaca  
ctgggagccctgagatccagccccctatgtcagagctcacagagacgtgggtctgcgccctgggattgtctgtgggc

ctcgtgggcattggtgggcacgtcttcatcatccgaggccgcgttcagttggtgttccagacaccaagggc  
cccttga (SEQ ID NO:187)

DQA1\*0504

ctgaccacgtcgcccttattggtglaaactgtaccagcttaccggtctcttggccaglacacccatgaattga  
5 tggagatgagcagttctacgtggacctggggaggaaggagacgtctgggtttgacctgtctcagacaattaga  
...ttgaccgcgaatttgacatgacaacatcgctgttctaaaacataacttgaacagcttgattaaacgctcca  
actctaccgtgtctaccaatg (SEQ ID NO:188)

DQA1\*0505

atgatcctaaacaaagctctgatgctggggaccttgccctgaccaccgtgatgagccccgtggagggtgaagaca  
10 ttgtggctgaccacgtcgcccttattggtglaaactgtaccagcttaccggtcccttggccaglacacccatga  
atttgatggagatgagcagttctacgtggacctggggaggaaggagacgtctgggtttgacctgtctcagacaa  
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gctccaactctaccgtgtctaccaatgagggttcttgagggtcacagtggtttccaagcttcccgtagacatgggtca  
gccaacatcctcatctgtcttgggacaacatcttccctctgtgttcaacatcacatggctgagcaatgggcac  
15 tcatgtcacagaagggtttcttgagaccagcttctctccaagagtgatcatcttcttcaagatcagttacctca  
ccctctctcttctgtctgaggagagttagactgcaagggtgagcacatggggactggacaagcctctcttgaacaa  
ctgggagcctgagatccagccccatgtcagagctcacagagacgtgtgtctgcgccctggggtgtctgtgggc  
ctcgtgggcattggtgggcacgtcttcatcatccgaggccgcgttcagttggtgttccagacaccaagggc  
cccttga (SEQ ID NO:189)

20 DQA1\*060101

atgatcctaaacaaagctctgtctgctgggggcccttgccctgaccaccgtgatgagccccgtggagggtgaagaca  
ttgtggctgaccatgttggctcttattggtglaaactgtaccagcttaccggtcccttggccagttacccatga  
atttgatggagacgagcagttctacgtggacctggggaggaaggagacgtctgggtttgacctgtctcagacaa  
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25 gctccaactctaccgtgtctaccaatgagggttcttgagggtcacagtggtttccaagcttcccgtagacGctgggtca  
gccaacaccctcatctgtcttgggacaacatcttccctctgtgttcaacatcacatggctgagcaatgggcac  
tcatgtcacagaagggtttcttgagaccagcttctctccaagagtgatcatcttcttcaagatcagttacctca

ccctccctccctctcgtcgtatgagatttctgactgcaaggctggagcacctggggccctggacgagccctctctgaaaca  
ctgggagccctgagattccagccccctatgctcagagctcacagagacgtggtctcgcgccctgggattgtctgtgggc  
ctcgtgggcatgtgtggggcacctgtcttcaatccagaggccctgcgttcagctgggtgtctccagacaccaagggc  
ccttgtga (SEQ ID NO:190)

## 5 DQA1\*060102

ggtgtaaactgtaccagctctacggctccctctggccagctcacccaatgaatttgaaggagacgagcagctctacg  
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actgacaaacatcgctgacaaaacacaacttgaacatccctgattaaacgctccaactctaccgctgctaccaat  
ga (SEQ ID NO:191)

## 10 DQB1\*050101

gggccctgtgtactctaccaacgggacggagcgctgcgggggtgtgaccagacacatctataaccgagaggagtac  
gtgcgctctgacagcgacgtgggggtgtaccgggcAgctgacgccgaggggcggccctgttgcgagctactggaaca  
gccagaaggaagctctggagggggcccgggcgTcgttgacagGggtgtgacagacacaactacgaggtggcgctaccg  
cgggatctctgacagaggaggtggagcccacagtgaccatctcccatccaggacagaggcccctcaaccaccacaac  
ctgtctgtatctgtctgggtgacagattctatccaagccagatcaaagctcggttggttctcggaatgatcaggaggaga  
cagccggcgctgtgtccacccccctcattaggaacgggtgactggacctccagatcttgggtatgtctggaatgac  
tccccagcgctggagatgtctacacctgccacgtggagcaccacagctccagagccccatcaccgtggagtgg (SE  
Q ID NO:192)

## DQB1\*050102

20 gggccctgtgtactctaccaacgggacggagcgctgcgggggtgtgaccagacacatctataaccgagaggagtac  
gtgcgctctgacagcgacgtgggggtgtaccgggcgggtgacgccgaggggcggccctgttgcgagctactggaaca  
gccagaaggaagctctggagggggcccgggcgTcgttgacagAgctgtgacagacacaactacgaggtggcgctaccg  
cgggatctctgacagg (SEQ ID NO:193)

## DQB1\*050201

25 gggccctgtgtactctaccaacgggacggagcgctgcgggggtgtgaccagacacatctataaccgagaggagtac  
gtgcgctctgacagcgacgtgggggtgtaccgggcgggtgacgccgaggggcggccctagcggcagctactggaaca  
gccagaaggaagctctggagggggcccgggcgTcgttgacagagtgctgacagacacaactacgaggtggcgctaccg

cgggatccctgcagaggagagtgaggccacagigaccaatciccccaiccaggacagaggccccaaccaccacaac  
ctgctgatactgctcggigacagatttctatccaagccaCatcaaagtcggigggttccggaatgacaggaggaga  
cagccggcgltgtgtccacccccctcattaggaacggigactggaccttccagatccctggatgctggaaatgac  
tccccagcgtggagatgtctacacctgccacgtggagcaccacagccctccagagccccaaccgtggagtgg (SE

5 Q ID NO:194)

DQB1\*050202

gggccctgtctacttcaccaacgggacggagcgcgtgcgggggtgtgaccagacacatctataaccgagaggaglac  
gtgcgcttcgacagcgacgtgggggtgtatcgggcgggtgacgccgcaggggcggccctgACgccgagtlacggaaca  
gccagaaggaagtcctggagggggcccgggcgctcggtggacagAgltgtcagacacaactacgaggtggcgtaaccg

10 cgggatccctgcagagga (SEQ ID NO:195)

DQB1\*050301

gggccctgtctacttcaccaacgggacggagcgcgtgcgggggtgtgaccagacacatctataaccgagaggaglac  
gtgcgcttcgacagcgacgtgggggtgtatcgggcgggtgacgccgcaggggcggccctgACgccgagtlacggaaca  
gccagaaggaagtcctggagggggcccgggcgctcggtggacagAgltgtcagacacaactacgaggtggcgtaaccg

15 cgggatccctgcagaggagagtgaggccacagigaccaatciccccaiccaggacagaggccccaaccaccacaac  
ctgctgatactgctcggigacagatttctatccaagccagatcaaagtcggigggttccggaatgacaggaggaga  
cagccggcgltgtgtccacccccctcattaggaacggigactggaccttccagatccctggatgctggaaatgac  
tccccagcgtggagatgtctacacctgccacgtggagcaccacagccctccagagccccaaccgtggagtgg (SE  
Q ID NO:196)

20 DQB1\*050302

gacggagcgcgtgcgggggtgtgaccagacacatctataaccgagaggaglacgtgcttcgacagcgacgtgggg  
gtgtatcgggcgggtgacgccgcaggggcggccctgAtgccgagtlacggaacagccagaaggaagtcctggag (SEQ  
ID NO:197)

DQB1\*0504

25 gggccctgtctacttcaccaacgggacggagcgcgtgcgggggtgtgaccagatatactataaccgagaagagtlac  
gtgcttcgacagcgacgtgggggtgtaccgggcgggtgacgccgcaggggcggccctgAGgccgagtlacggaaca  
gccagaaggacatccctggaggAggaccgggcgtcggtggacaggggtgtcagacacaact (SEQ ID NO:198)

5

10

15

20

25

**DQB1\*030101**

ggccaatgtgctacttcaccaacgggacggagcgcgtgcgttaatgtgaccagatacatctataaaccgagaggagtlac  
gcacgcttcgacagcgacgtggAggtgtaccgggcggtagcgcgcgtggggccgctgAcgccgagtlactggaaca  
gccagaaggaagtcctggagaggacccgggcggagtlggacacgggtgtagacacaaactaccagtlggagctccg  
cacgaccttgcagcggcgagtlggagcccacagtagcaatctcccatccaggacagaggccctcaaccaccacaac  
5 ctagctggctcgtcagtagacagatttctatccagcccagatcaaagtcgggtgggttcggaatgaccaggaggaga  
caaccggcgltgtgtccaccccccttatlaggaacggtagctggaccttccagatccctggtagtgcctggaaatgac  
tccccagcattggagaCgtctacacctgccacgtggagcaccacccagcctccagaAccccatcacctggagtagg (SE  
Q ID NO:202)

DQBI\*030102

10 ggccaatgtgctacttcaccaacgggacggagcgcgtgcgttaatgtgaccagatacatctataaaccgagaggagtlac  
gcgcgcttcgacagcgacgtggAggtgtaccgggcggtagcgcgcgtggggccgctgAcgccgagtlactggaaca  
gccagaaggaagtcctggagaggacccgggcggagtlggacacgggtgtagacacaaactaccagtlggagctccg  
cacgaccttgcagcggcgag (SEQ ID NO:203)

DQBI\*0302

15 gggcaatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtgaccagatacatctataaaccgagaggagtlac  
gcAcgcttcgacagcgacgtgggggtgtatcgggcggtagcgcgcgtggggccgctgCgccgagtlactggaaca  
gccagaaggaagtcctggagaggacccgggcggagTlggacacgggtgtagacacaaactaccagtlggagctccg  
cacgaccttgcagcggcgagtlggagcccacagtagcaatctcccatccaggacagaggccctcaaccaccacaac  
ctagctggctcgtcagtagacagatttctatccagcccagatcaaagtcgggtgggttcggaatgaccaggaggaga  
20 caactggcgltgtgtccaccccccttatlaggaacggtagctggaccttccagatccctggtagtgcctggaaatgac  
tccccagcgtggagacgtctacacctgccacgtggagcaccacccagcctccagaaccccatcaTcgtggagtagg (SE  
Q ID NO:204)

DQBI\*030302

gggcaatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtgaccagatacatctataaaccgagaggagtlac  
25 gcacgcttcgacagcgacgtgggggtgtatcgggcggtagcgcgcgtggggccgctgAcgccgagtlactggaaca  
gccagaaggaagtcctggagaggacccgggcggagTlggacacgggtgtagacacaaactaccagtlggagctccg  
cacgaccttgcagcggcgagtlggagcccacagtagcaatctcccatccaggacagaggccctcaaccaccacaac



ctgctggctcgtcagtgacagatttctatccagcccagatcaaagtcgggtgggttcggaatgaccaggaggaga  
caaciggcgttggtccaccccccttattaggaacggtagctggaccttccagatccctggtagctggaaatgac  
tccccagcgtggagacgtctacacctgccacgtggagcaccacagccctccagaaccccatcaTcgtggagtgg (SE  
Q ID NO:205)

## 5 DQBI\*030303

gggcatgtgtacttcaccaacgggacggagcgcgtgcgtctgtgaccagatatactataaaccgagaggagtac  
gcgcgtctgcacagcgacgtgggggtgtatcgggcggtagcggcgtggggccgctgCgcccagtagctggaaca  
gccagaaggaagtcctggagAggacccggcggtTggacacgggtgtgcagacacaactaccagtggagctccg  
cacgaccttgcagcggcgag (SEQ ID NO:206)

## 10 DQBI\*0304

ggccatgtgtacttcaccaacgggacggagcgcgtgcgttattgtgaccagatatactataaaccgagaggagtac  
gcacgtctgcacagcgacgtggAggtgtaccggcggtgacggcgtggggccgctgCgcccagtagctggaaca  
gccagaaggaagtcctggagaggacccggcggtTggacacgggtgtgcagacacaactaccagtggagctccg  
cacgaccttgcagcggcgagtgagccacagtgaccttccccatccaggacagaggccctcaaccaccacaac

15 ctgctggctcgtcagtgacagatttctatccagcccagatcaaagtcgggtgggttcggaatgaccaggaggaga  
caaccggcgttggtccaccccccttattaggaacggtagctggaccttccagatccctggtagctggaaatgac  
tccccagcatggagaCgtctacacctgccacgtggagcaccacagccctccagaAccccatcacctggagtgg (SE  
Q ID NO:207)

## DQBI\*030501

20 gggcatgtgtacttcaccaacgggacCgagcgcgtgcgggtgtgaccagatatactataaaccgagaggagtac  
gcgcgtctgcacagcgacgtgggggtgtatcgggcggtagcggcgtggggccgctgcccggcagtagctggaaca  
gccagaaggaagtcctggagaggacccggcggtTggacacgggtgtgcagacacaactaccagtggagctccg  
cacgaccttgcagcggcgagtgagccacagtgaccttccccatccaggacagaggccctcaaccaccacaac  
ctgctggctcgtcagtgacagatttctatccagcccagatcaaagtcgggtgggttcggaatgaccaggaggaga  
25 caaciggcgttggtccaccccccttattaggaacggtagctggaccttccagatccctggtagctggaaatgac  
tccccagcgtggagacgtctacacctgccacgtggagcaccacagccctccagaaccccatcatcgtggagtgg (SE  
Q ID NO:208)

DQB1\*030502

gggcaatgtgctacttcaccaacgggacggagcgcgtaggggtagtaccagatataataaccgagaggagtag  
gcgcgcttcgacagcgacgtgggggtgtatcgggcggtagcgccgtggggccgctgCgcccagtagtaggaaca  
gccagaaggaagtcctggagAggacccgggcggagtaggacaCggtagtcagacacaactaccagtaggagctccg  
5 cagcaccttgcagcggcgag (SEQ ID NO:209)

DQB1\*0306

gggcaatgtgctacttcaccaacgggacggagcgcgtagcgctttagtaccagatataataaccgagaggagtag  
gcacgcttcgacagcgacgtgggggtgtatcgggcggtagcgccgtggggcCgctgacgccgagtagtaggaata  
gccagaaggacatcctggaggaggaccgggcgtcggtggacaccgtagtcagacacaactaccagtaggagctccg  
10 cagcaccttgcagcggcgag (SEQ ID NO:210)

DQB1\*0307

gggcaatgtgctacttcaccaacgggacggagcgcgtagcgctttagtaccagatataataaccgagaggagtag  
gcacgcttcgacagcgacgtgggggtgtatcgggTggtagcgccgtggggccgctgcccggagtagtaggaaca  
gccagaaggaagtcctggaggaggaccgggcggagtaggacacggtagtcagacacaactaccagtaggagctccg  
15 cagcaccttgcagcggcga (SEQ ID NO:211)

DQB1\*0308

gggcaatgtgctacttcaccaacgggacggagcgcgtagcgctttagtaccagatataataaccgagaggagtag  
gcAcgcttcgacagcgacgtgggggtgtatcgggcggtagcgccgtggggccgctgCgcccagtagtaggaaca  
gccagaaggaagtcctggaggaggaccgggcggagtaggacaCggtagtcagacacaactaccagtaggagctccg  
20 cagcaccttgcagcggcgag (SEQ ID NO:212)

DQB1\*0309

ggccaatgtgctacttcaccaacgggacggagcgcgtagcgcttagtaccagatataataaccgagaggagtag  
gcacgcttcgacagcgacgtggagggtgtaccggcggtagcgccgtggggccgctgacgccgagtagtaggaaca  
gccagaaggaagtcctggaggaggaccgggcggagtaggacacggtagtcagacacaactaccagtaggagctccg  
25 cagcaccttgcagcggcgagtaggagcccacagtaggacatccccatccaggacagaggccccaaccaccacaac  
ctgctggctcgtcagtagacagattctatccagcccagatcaaagtcggtaggttcggaatgaccaggaggaga  
caaccggcgtgtgtccacccccctattaggaacggtagcaggacctccagatccgtgtatgctggaaatgac

tccccagcatgcC...gtctacacctgccacgtggagcaccacccagccctccagaacccaatcaccgtggagtgg (SE  
Q ID NO:213)

DQB1\*0310

ggccatgtgctacitcaccaacgggacggagcgcgtgcgttaigtgaccagatacatctataaccgagaggagtac  
5 gcacgcttcgacagcgacgtgggggtgtaTcgggcggtagcggcgtggggccgctgAcgccgagtactggaaca  
gccagaaggaagtcctggagaggaccggcggtggacacgggtgtagacacaaactaccagttggagctccg  
cacgaccttgcagcggcgagtgagagccacagtagcatactcccaatccaggacagaggcccccaaccaccacaac  
ctgctgggtctgctcagtagacagattctatccagcccagatcaaagtcgggtgggttcggaaagaccaggaggaga  
caaccggcggtgtgtccacccccctataggaaacggtagctggacctccagatccctggtagtctggaaatgac  
10 tccccagcAtggagaCgtctacacctgccacgtggagcaccacccagccctccagaAccccatcaccgtggagtgg (SE  
Q ID NO:214)

DQB1\*0311

gggctgtgctacitcaccaacgggacggagcgcgtgcgtcttgtgaccagatacatctataaccgagaggagtac  
gcAcgcttcgacagcgacgtgggggtgtaTcgggcggtagcggcgtggggccgctgCgccgagtactggaaca  
15 gccagaaggaagtcctggagAggacccggcggtggacacgggtgtagacacaaactaccagttggagctccg  
cacgaccttgcagcggcgag (SEQ ID NO:215)

DQB1\*0312

ggccatgtgctacitcaccaacgggacggagcgcgtgcgtcttgtgaccagatacatctataaccgagaggagtac  
gcAcgcttcgacagcgacgtgggggtgtaTcgggcggtagcggcgtggggccgctgAcgccgagtactggaaca  
20 gccagaaggaagtcctggagAggacccggcggtTggacacgggtgtagacacaaactaccagttggagctccg  
cacgaccttgcagcggcgag (SEQ ID NO:216)

DQB1\*0313

ggccatgtgctacitcaccaacgggacggagcgcgtgcgttaigtgaccagatacatctataaccgagaggagtac  
gcacgcttcgacagcgacgtggagggtgtagccggcggtgtagcggcgtggggccgctgacgccgagtactggaaca  
25 gccagaaggaagAcclggagaggaccggcggtggacacgggtgtagacacaaactaccagttggagctccg  
cacgaccttgcagcggcgag (SEQ ID NO:217)

DQB1\*0401

gggca t g t c t a c t t c a c c a a c g g g a c c g a g c t c g t g c g g g t g t g a c c a g a t a c a t c t a t a a c c g a g a g g a g t a c  
g c g c g c t t c g a c a g c g a c g t g g g g t g t a t c g g g c g g t g a c g c c g t g g g c g g c t g a c g c c g a g t a c t g g a a t a  
g c c a g a a g g a c a t c c t g g a g a g g a c c g g g c g t c g g t g g a c a c c g t a t g c a g a c a c a a c t a c c a g t t g g a g c t c c g  
c a c g a c c t t g c a g c g g c g a g t g g a g c c c a c a g t g a c c a t c t c c c a t c c a g g a c a g a g g c c c t a a c c a c c a c a a c  
5 c t g c t g g t c t g c t c a g t g a c a g a t t t c t a t c c a g c c c a g a t c a a a g t c c g g t g g t t c g g a a t g a c c a g g a g g a g a  
c a a c t g g c g t t g t g t c c a c c c c c t t a t t a g g a a c g g t g a c t g g a c c t t c c a g a t c c t g g t g a t g c t g g a a t g a c  
t c c c c a g c g t g g a g a c g t c t a c a c c t g c c a c g t g g a g c a c c c c a g c c t c c a g a a c c c c a t c a t c g t g g a g t g g (SE  
Q ID NO:218)

DQB1\*0402

10 g g g c a t g t g c t a c t t c a c c a a c g g g a c c g a g c g c g t g c g g g t g t g a c c a g a t a c a t c t a t a a c c g a g a g g a g t a c  
g c g c g c t t c g a c a g c g a c g t g g g g t g t a t c g g g c g g t g a c g c c g t g g g c g g c t g a c g c c g a g t a c t g g a a t a  
g c c a g a a g g a c a t c c t g g a g a g g a c c g g g c g t c g g t g g a c a c c g t a t g c a g a c a c a a c t a c c a g t t g g a g c t c c g  
c a c g a c c t t g c a g c g g c g a g t g g a g c c c a c a g t g a c c a t c t c c c a t c c a g g a c a g a g g c c c t a a c c a c c a c a a c  
c t g c t g g t c t g c t c a g t g a c a g a t t t c t a t c c a g c c c a g a t c a a a g t c c g g t g g t t c g g a a t g a c c a g g a g g a g a  
15 c a a c t g g c g t t g t g t c c a c c c c c t t a t t a g g a a c g g t g a c t g g a c c t t c c a g a t c c t g g t g a t g c t g g a a t g a c  
t c c c c a g c g t g g a g a c g t c t a c a c c t g c c a c g t g g a g c a c c c c a g c c t c c a g a a c c c c a t c a t c g t g g a g t g g (SE  
Q-ID NO:219)

DQB1\*060101

g g c c a t g t g c t a c t t c a c c a a T g g g a c g g a g c g c g t g c g t t a t g t g a c c a g a t a c a t c t a t a a c c g a g a g g a g g a c  
20 g t g c g c t t c g a c a g c g a c g t g g g g t g t a t c g g g c g g t g a c g c c g c a g g g c g g c c t g a c g c c g a g t a c t g g a a c a  
g c c a g a a g g a c a t c c t g g a g a g g a c c c g a g c g g a g t g g a c a c g g t g t g c a g a c a c a a c t a c g a g g t g g c g t t c c g  
c g g g a t c t t g c a g a g g a g a g t g g a g c c c a c a g t g a c c a t c t c c c a t c c a g g a c a g a g g c c c t a a c c a c c a c a a c  
c t g c t g g t c t g c t c g g t g a c a g a t t t c t a t c c a g g c c a g a t c a a a g t c c g g t g g t t c g g a a t g a c c a g g a g g a g a  
c a g t g g c g t t g t g t c c a c c c c c t t a t t a g g a a c g g t g a c t g g a c c t t c c a g a t c c t g g t g a t g c t g g a a t g a c  
25 t c c c c a g c a t g g a g a c g t c t a c a c c t g c c a c g t g g a g c a c c c c a g c c t c c a g a g c c c c a t c a c c g t g g a g t g g (SE  
Q ID NO:220)

DQB1\*060102

ggcaatgigtacttaccacgggacggagcggtgcgttaatgigaccagatacatctataaaccgagaggaggacg  
tgcgcttcgacagcgacgtgggggtgtatcgggcggtagcCccgagggcgccctgacgccgagtagtggaaacag  
ccagaaggacatccctggagaggacccgagcggagtaggacacggtagcaga (SEQ ID NO:221)

DQB1\*060103

5 ggccaatgigtacttaccacgggacggagcggtgcgttaatgigaccagatacatctataaaccgagaggaggac  
tgcgcttcgacagcgacgtgggggtgtatcgggcggtagcCccgagggcgccctgacgccgagtagtggaaacag  
ggcagaaggacatccctggagaggacccgagcggagtaggacacggtagcagacacaactacgaggtagcggtccg  
cgggatactgacagaggagtaggagcccacagtagcatactcccatccaggacagaggccctcaaccaccacaac  
ctgctgggtctgctcggtagacagattctatccaggccagatcaaagtcggtaggttctggaatgaccaggaAgaga  
10 cagctggcgtagtgcaccccccttatlaggaacggtagctggacctccagatccctggtagtctggaaatgac  
tccccagcatggagacgtctacacctgccacgtggagcaccacagctccagagcccatcaccgtggagtagg (SE  
Q ID NO:222)

DQB1\*0602

gggcaatgigtacttaccacgggacggagcggtgcgtcttctgaccagaTacaatctataaaccgagaggagtag  
15 ggcgcttcgacagcgacgtgggggtgtaccgcggtgacgccgagggcgccctgtagccgagtagtggaaacag  
ggcagaaggaagtccctggaggggacccgggcggagtaggacacggtagcagacacaactacgaggtagcggtccg  
cgggatactgacagaggagtaggagcccacagtagcatactcccatccaggacagaggccctcaaccaccacaac  
ctgctgggtctgctcggtagacagattctatccaggccagatcaaagtcggtaggttctggaatgacaggaggaga  
cagccggcgtagtgcaccccccttatlaggaatggtagctggacTtccagatccctggtagtctggaaatgac  
20 tccccagctggagatgtctacacctgccacgtggagcaccacagctccagagcccatcaccgtggagtagg (SE  
Q ID NO:223)

DQB1\*0603

gggcaatgigtacttaccacgggacggagcggtgcgtcttctAaccagacacatctataaaccgagaggagtag  
ggcgcttcgacagcgacgtgggggtgtaccgcggtgacgccgagggcgccctgtagccgagtagtggaaacag  
25 ggcagaaggaagtccctggaggggacccgggcggagtaggacacggtagcagacacaactacgaggtagcggtccg  
cgggatactgacagaggagtaggagcccacagtagcatactcccatccaggacagaggccctcaaccaccacaac  
ctgctgggtctgctcggtagacagattctatccaggccagatcaaagtcggtaggttctggaatgacaggaggaga

cagccggcgttggtgccaccccccttat taggaatggtagctggacTttccagatccctggtagctggaaatgac  
tccccagcgtggagatgtctacacctgccacgtggagcaccacagccctccagagccccatcacctggagtagg (SE  
Q ID NO:224)

DQB1\*060401

5 gggcatgtgtacttcaccaacgggacggagcgcgtgcgtcttgtaaccagacacatctataaccgagaggagtag  
gcgcgcttcgacagcgacgtgggggtgtaccggcggtgacgccgagggcgggccgttgccgagtagtggaaaca  
gccagaaggaagtcctggagAggacccggcggtgtggacacgggtgtgcagacacaactacgaggtggggtagcg  
cgggatccctgcagaggagtagggacccacagtgaccatctccccatccaggacagaggccctcaaccaccacaac  
ctgctggctcgtcggtagagattctatccaggccagatcaaagtcAgtaggttccggaatgtagcaggaggaga  
10 cagccggcgttggtgccaccccccttat taggaatggtagctggacTttccagatccctggtagctggaaatgac  
tccccagcgtggagatgtctacacctgccacgtggagcaccacagccctccagagccccatcacctggagtagg (SE  
Q ID NO:225)

DQB1\*060402

gggcatgtgtacttcaccaacgggacggagcgcgtgcgtcttgtaaccagacacatctataaccgagaggagtag  
15 gcgcgcttcgacagcgacgtgggggtgtaccgCgcggtgacgccgagggcgggccgttgccgagtagtggaaaca  
gccagaaggaagtcctggagAggAcccggcggtgtggacacgggtgtgcagacacaactacgaggtggGtagcg  
cgggatccctgcagaggagtagggacccacagtgaccatctccccatccaggacagaggcc (SEQ ID NO:226)

DQB1\*060501

gggctgtgtacttcaccaacgggacggagcgcgtgcgtcttgtaaccagatacatctataaccgagaggagtag  
20 gcgcgcttcgacagcgacgtgggggtgtaccggcggtgacgccgagggcgggccgttgccgagtagtggaaaca  
gccagaaggaagtcctggagAggAcccggcggtgtggacacgggtgtgcagacacaactacgaggtggGtagcg  
cgggatccctgcagaggagtagggacccacagtgaccatctccccatccaggacagaggcc (SEQ ID NO:227)

DQB1\*060502

ggacggagcgcgtgcgtcttgtaaccagatacatctataaccgagaggagtagcgcgcttcgacagcgacgtggg  
25 ggtgtaccggcggtgacgccgagggcgggccgttGccgagtagtggaaacagccagaaggaagtcctggagAgg  
AcccggcggtgtggacaG (SEQ ID NO:228)

DQB1\*0606

ggacggagcgcgtgcgtcttgtAaccagaTacaTclataaaccgagaggagTaccgcgcttcgacagcgacgtggg  
ggTgtaccggcggtgacgccgcagggcgccctgttgccgagTactggaacagccagaaggaagtcctggagAgg  
AcccgggcgcggtggacagggTg (SEQ ID NO:229)

DQB1\*0607

5 gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtAaccagacacaTclataaaccgagaggagTac  
gcgcgttcgacagcgacgtgggggtgtaccgCcggtgacgccgcagggcgccctgttgccgagTactggaaca  
gccagaaggaagtcctggagAggAcccgggcggtgtggacacggTgtgcagacacaactacgaggTggGtaccg  
cgggatcc (SEQ ID NO:230)

DQB1\*0608

10 gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtAaccagacacaTclataaaccgagaggagTac  
gcgcgttcgacagcgacgtgggggtgtaccgCcggtgacgccgcagggcgccctgttgccgagTactggaaca  
gccagaaggaagtcctggaggggacccggcggtgtggacacggTgtgcagacacaactacgaggTggcgttccg  
cgggatcT (SEQ ID NO:231)

DQB1\*0609

15 gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtAaccagaTacaTclataaaccgagaggagTac  
gcgcgttcgacagcgacgtgggggtgtaccggcggtgacgccgcagggcgccctgttgccgagTactggaaca  
gccagaaggaagtcctggagAggacccggcggtgtggacacggTgtgcagacacaactacgaggTgggtaccg  
cgggatccTgcagaggagTggagcccacagTgaccaTccccatccaggacagaggccccTcaaccaccacaac  
ctgtgtggtctgtcgtgacagatTtclataccagccagatcaaagTccAgTggtTtcggaatgatcaggaggaga

20 cagccggcgtgtgtccacccccTatTaggaaTggTgacTggacTtccagatccTggTgatgtcTggaaTgac  
TccccagcgtggagatgtctacacTgccacgtggagcaccacagccTccagagccccatcaccgtggagTgg (SE  
Q ID NO:232)

DQB1\*0610

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtgaccagatacaTclataaaccgagaggagTac  
25 gcgcgttcgacagcgacgtgggggtgtaccgCcggtgacgccgcagggcgccctTgcgccgagTactggaaca  
gccagaaggaagtcctggaggggacccggcggtgtggacacggTgtgcagacacaactacgaggTggcgttccg  
cgggatcTgtcagaggagag (SEQ ID NO:233)

DQB1\*061101

gggcaTgtgctacTtaccacgggacggagcgcgTgcgTctTgtgaccagaTacaTctataaccgagaggagTac  
gcgcgctTcgacagcgacTgggggtgtaccgCgcggTgacgccgcagggcgccTgAtgccgagTactTggaaca  
gccagaaggaagTccTggaggggacccgggcggagTggacacggTgtgcagacacaactacgaggtggcgTtccg  
5 cgggatcTgtcagagg (SEQ ID NO:234)

DQB1\*061102

gggcaTgtgctacTtaccacgggacggagcgcgTgcgTctTgtAaccagaTacaTctataaccgagaggagTac  
gcgcgctTcgacagcgacTgggggtgtaccgCgcggTgacgccgcagggcgccTgAtgccgagTactTggaaca  
gccagaaggaagTccTggaggggacccgggcggagTggacacggTgtgcagacacaactacgaggtggcgTtccg  
10 cgggatcTgtcagaggagag (SEQ ID NO:235)

DQB1\*0612

gggcaTgtgctacTtaccacgggacggagcgcgTgcgTctTgtAaccagaTacaTctataaccgagaggagTac  
gcgcgctTcgacagcgacTgggggtgtaccggcgTgacgccgcagggcgccTgtTgccgagTactTggaaca  
gccagaaggaagTccTggaggggacccgggcggagTggacacggTgtgcagacacaactacgaggtgggtTaccg  
15 cgggatccTgcagaggagagTggagccacagTaccatctcccatccaggacagagggccTcaaccaccacaac  
ctgctTggTctgctcggTgacagattctatccaggccagatcaaagTccAgTggTtTcggaatgatcaggaggaga  
cagccggcgTgtgtccaccccccttatTaggaaTggTgacTggacTtTccagatccTggTgatTcTggaaatgac  
tccccagcgTggagatgtctacacTgccacgTggagcaccacagccTccagagcccatcaccTggagTgg (SE  
Q ID NO:236)

20 DQB1\*0613

gggcaTgtgctacTtaccacgggacggagcgcgTgcgTctTgtgaccagaTacaTctataaccgagaggagTac  
gcgcgctTcgacagcgacTgggggtgtaccgCgcggTgacgccgcagggcgccTgtTgccgagTactTggaaca  
gccagaaggaagTccTggaggggacccgggcggagTggacacggTgtgcagacacaactacgaggtggcgTtccg  
cgggat (SEQ ID NO:237)

25 DQB1\*0614

gggcaTgtgctacTtaccacgggacggagcgcgTgcgTctTgtAaccagacacaTctataaccgagaggagTac  
gcgcgctTcgacagcgacTgggggtgtaccgCgcggTgacgccgcagggcgccTgAtgccgagTactTggaaca



gccagaaggaagtcctggaggggacccgggaggagltggacacggltgacagacacaactacgaggtggcgtlccg  
cgggatcTtgcagaggagag (SEQ ID NO:238)

DQB1\*0615

gggcatgtgctacttcaccaacgggacggagcggtgcgtctgtgaccagaTacaTcTataaccgagaggagTac  
5 gcgcgcttcgacagcgacgtgggggtgtaccgcggtgacgccgcagggcgccctgAlgccgagTactTgaaca  
gccagaaggaagtcctggagAggAcccgggaggagltggacacggltgacagacacaactacgaggtggGgtaccg  
cgggatcctgcagaggagag (SEQ ID NO:239)

DQB1\*0616

gggcatgtgctacttcaccaacgggacggagcggtgcgtctgtgaccagaTacaTcTataaccgagaggagTac  
10 gcgcgcttcgacagcgacgtgggggtgtaccgcggtgacgccgcagggcgccctgAlgccgagAactTgaaca  
gccagaaggaagtcctggaggggacccgggaggagltggacacggltgacagacacaactacgaggtggcgtlccg  
cgggatcTtgcagaggagag (SEQ ID NO:240)

DQB1\*0617

gggcatgtgctacttcaccaacgggacggagcggtgcgtctgtgAaccagacacatcTataaccgagaggagTac  
15 gcgcgcttcgacagcgacgtgggggtgtaccggcggtgacgccgcagggcgccctgtTgccgagTactTgaaca  
gccagaaggaagtcctggagggggcccgggaggagltggacacggltgacagacacaactacgaggtggGgtaccg  
c (SEQ ID NO:241)

DQB1\*0618

gggcatgtgctacttcaccaacgggacggagcggtgcgtctgtgAaccagatacatcTataaccgagaggagTac  
20 gcgcgcttcgacagcgacgtgggggtgtaccggcggtgacgccgcagggcgccctgtTgccgagTactTgaaca  
gccagaaggaagtcctggagAggacccgggaggagltggacacggltgacagacacaactacgaggtggcgtlccg  
cgggatcTtgcagaggag (SEQ ID NO:242)

DQB1\*0619

gggcatgtgctacttcaccaacgggacggagcggtgcgtctgtgaccagaTacaTcTataaccgagaggagTac  
25 gcgcgcttcgacagcgacgtgggggtgtTcggcggtgacgccgcTggggcgccctgAlgccgagTactTgaaca  
gccagaaggaagtcctggaggggacccgggaggagTggacacggltgacagacacaactacgaggtggcgtlccg  
cgggatcTtgcagaggagag (SEQ ID NO:243)

DQB1\*0620

gggccctgtgctacttcaccaacgggacggagcgcgtgcgtcttggaccagaTacaatctataaccgagaggagtac  
gcgcgcttcgacagcgacgtgggggtgaccgCgcggtgacccgcagggcgccctgAtgccgaglaciggaaca  
gccagaaggaagtcctggaggggacccggcgagttggacacgggtgtgcagacacaactacgaggtggcgtTccg

5 c (SEQ ID NO:244)

In the following, Probe Lists DQ1 and DQ2 are  
shown in Tables 17A, 17B-1 and 17B-2 and tables 18A,  
18B-1 and 18B-2 respectively. Tables 19A, 19B-1 and  
10 19B-2 and Tables 20A, 20B-1 and 20B-2 show Allele-  
Prove Lists.

Table 17A

Probe No.	Base Sequence
0	t gaa ttt gat gga gat gag G ( SEQ ID No: 1)
1	ggt gct tcc aga cac caG ( SEQ ID No: 2)
2	gg ttg tct gtg ggc ctc A ( SEQ ID No: 3)
3	cag ccc aac acc ctc atC ( SEQ ID No: 4)
4	g ctg agc aat ggg cac G ( SEQ ID No: 5)
5	ca gag act gtg gtc tgc A ( SEQ ID No: 6)
6	c cct tgt gga ggt gaa gG ( SEQ ID No: 7)
7	cct gtg gtc aac atc acC ( SEQ ID No: 8)
8	ccc tgt gga ggt gaa gG ( SEQ ID No: 9)
9	c ctg gag agg aag gag G ( SEQ ID No: 10)
10	tg cct ctg ttc cac aga C ( SEQ ID No: 11)
11	x ag cct gag att cca A ( SEQ ID No: 12)
12	gcc ctg acc acc gtg aC ( SEQ ID No: 13)
13	c acc ttc ctc cct tct gA ( SEQ ID No: 14)
14	tt aaa cgc tcc aac tct acT ( SEQ ID No: 15)
15	cc aga cac caa ggg ccC ( SEQ ID No: 16)
16	ca gtg ttt tcc aag tct ccT ( SEQ ID No: 17)
17	g cac tgg ggc ctg gac A ( SEQ ID No: 18)
18	g gtc tgc gcc ctg ggA ( SEQ ID No: 19)
19	ct gac cac gtt gcc tct tA ( SEQ ID No: 20)
20	c cta aaa cat aac ttg aac agT ( SEQ ID No: 21)
21	c aga caa ttt aga ttt gac cG ( SEQ ID No: 22)
22	tc acc ctc ctc cct tct T ( SEQ ID No: 23)
23	tg tac cag tct tac ggt cT ( SEQ ID No: 24)
24	ag gtg gag cac tgg ggA ( SEQ ID No: 25)
25	ggt ccc tct ggc cag tT ( SEQ ID No: 26)
26	cc aag tct ccc gtg acG ( SEQ ID No: 27)
27	gca ctg aca aac atc gcC ( SEQ ID No: 28)

Table 17B-1

Probe No.	Base Sequence
0	g ggg gtg tac cgg gCA ( SEQ ID No: 29)
1	cg cag ggg cgg cct gT ( SEQ ID No: 30)
2	ag ggg gcc cgg gcg T ( SEQ ID No: 31)
3	gg gcg tcg gtg gac aG ( SEQ ID No: 32)
4	gg gcg tcg gtg gac agA ( SEQ ID No: 33)
5	ca gat ttc tat cca agc caC ( SEQ ID No: 34)
6	gc gac gtg ggg gtg taT ( SEQ ID No: 35)
7	cg cag ggg cgg cct aG ( SEQ ID No: 36)
8	g cag ggg cgg cct agC ( SEQ ID No: 37)
9	cg cag ggg cgg cct gA ( SEQ ID No: 38)
10	g cag ggg cgg cct gaC ( SEQ ID No: 39)
11	g aag gac atc ctg gag gA ( SEQ ID No: 40)
12	g gac atc ctg gag agg aaA ( SEQ ID No: 41)
13	ct ccc cag cgt gga gaC ( SEQ ID No: 42)
14	c cgg tgg ttt cgg aat gG ( SEQ ID No: 43)
15	ctg ctg ggg ctg cct gA ( SEQ ID No: 44)
16	c ttc gac agc gac gtg gA ( SEQ ID No: 45)
17	cg ctg ggg ccg cct gA ( SEQ ID No: 46)
18	ct ccc cag cat gga gaC ( SEQ ID No: 47)
19	cac ccc agc ctc cag aA ( SEQ ID No: 48)
20	aac cga gag gag tac gCA ( SEQ ID No: 49)
21	g ctg ggg ccg cct gC ( SEQ ID No: 50)
22	agg acc cgg gcg gag T ( SEQ ID No: 51)
23	c ctc cag aac ccc atc aT ( SEQ ID No: 52)
24	cg gag cgc gtg cgt cT ( SEQ ID No: 53)
25	g acg ccg ctg ggg cC ( SEQ ID No: 54)
26	cag aag gaa gtc ctg gag A ( SEQ ID No: 55)
27	tac ttc acc aac ggg acC ( SEQ ID No: 56)

Table 17B-2

Probe No.

Base Sequence

28	cgg gcg gag ttg gac aC (SEQ ID No: 57)
29	cg tcg gtg gac acc gTA (SEQ ID No: 58)
30	gtg ggg gtg tat cgg gT (SEQ ID No: 59)
31	tg act ccc cag cat gcC (SEQ ID No: 60)
32	g gaa atg act ccc cag cA (SEQ ID No: 61)
33	gg aac agc cag aag gaa gA (SEQ ID No: 62)
34	acc aac ggg acc gag cT (SEQ ID No: 63)
35	g ccg ctg ggg cgg cT (SEQ ID No: 64)
36	cc atg tgc tac ttc acc aaT (SEQ ID No: 65)
37	tg tat cgg gcg gtg acC (SEQ ID No: 66)
38	g ttt cgg aat gac cag gaA (SEQ ID No: 67)
39	gtg cgt ctt gtg acc aga T (SEQ ID No: 68)
40	g gcg ttc cgc ggg atc T (SEQ ID No: 69)
41	t agg aat ggt gac tgg acT (SEQ ID No: 70)
42	gag cgc gtg cgt ctt gTA (SEQ ID No: 71)
43	ca ggc cag atc aaa gtc cA (SEQ ID No: 72)
44	c gtg ggg gtg tac cgC (SEQ ID No: 73)
45	ag gaa gtc ctg gag agg A (SEQ ID No: 74)
46	a cac aac tac gag gtg gG (SEQ ID No: 75)
47	gtg cgt ctt gta acc aga T (SEQ ID No: 76)
48	g cag ggg cgg cct gtC (SEQ ID No: 77)
49	c aac tac gag gtg gcg tT (SEQ ID No: 78)
50	g cgg cct gat gcc gag A (SEQ ID No: 79)
51	gg gcg gtg acg ccg cT (SEQ ID No: 80)
52	cg ctg ggg cgg cct gA (SEQ ID No: 81)
53	ggg acc cgg gcg gag T (SEQ ID No: 82)

Table 18A

Probe No.	Base Sequence
0	gga gat gag gag ttc tac g (SEQ ID No: 83)
1	c aga cac caG ggg'cca tt (SEQ ID No: 84)
2	gtg ggc ctc Atg ggc att (SEQ ID No: 85)
3	c acc ctc atC tgt ctt gtg (SEQ ID No: 86)
4	aat ggg cac Gca gtc aca (SEQ ID No: 87)
5	g gtc tgc Acc ctg ggg (SEQ ID No: 88)
6	ga ggt gaa gGc att gtg g (SEQ ID No: 89)
7	c aac atc acC tgg ctg ag (SEQ ID No: 90)
8	gg aag gag Gct gCt tgg (SEQ ID No: 91)
9	ctg ttc cac aga Ctt aga c c ttt (SEQ ID No: 92)
10	gag att cca Aca cct atg tc (SEQ ID No: 93)
11	c acc gtg aCg agc cct t (SEQ ID No: 94)
12	ctc cct tct gAt gat gag at (SEQ ID No: 95)
13	c aac tct acI gct gct acc (SEQ ID No: 96)
14	c atc atc cGa ggc ctg c (SEQ ID No: 97)
15	c aag tct ccI gtg acg ct (SEQ ID No: 98)
16	ggc ctg gac Aag cct ctt (SEQ ID No: 99)
17	c gcc ctg ggA ttg tct gt (SEQ ID No: 100)
18	gtt gcc tct tAt ggt gta aa (SEQ ID No: 101)
19	aac ttg aac agI ctg att aaa c (SEQ ID No: 102)
20	a cg . ttt gac cGg caa ttt gca c (SEQ ID No: 103)
21	ctc cct tct Tct gag gag (SEQ ID No: 104)
22	ct tac ggt cTc tct ggc c (SEQ ID No: 105)
23	g cac tgg ggA ctg gac aa (SEQ ID No: 106)
24	ct ggc cag tTc acc cat g (SEQ ID No: 107)
25	ccc gtg acG ctg ggt c (SEQ ID No: 108)
26	ca aac atc gCt gtg aca aaa (SEQ ID No: 109)

Table 18B-1

Probe No.	Base Sequence
0	tac cgg gcA gtg acg cc (SEQ ID No: 110)
1	g cgg cct gTt gcc gag (SEQ ID No: 111)
2	c cgg gcg Tcg gtg gac (SEQ ID No: 112)
3	g gtg gac aGg gtg tgc a (SEQ ID No: 113)
4	g gtg gac agA gtg tgc ag (SEQ ID No: 114)
5	t cca agc caC atc aaa gtc (SEQ ID No: 115)
6	ggg gtg taI cgg gcg g (SEQ ID No: 116)
7	g cgg cct aGc gcc gag (SEQ ID No: 117)
8	cgg cct agC gcc gag t (SEQ ID No: 118)
9	g cgg cct gAc gcc gag (SEQ ID No: 119)
10	cgg cct gaC gcc gag t (SEQ ID No: 120)
11	g cgg cct gAt gcc gag (SEQ ID No: 121)
12	c ctg gag gAg gac cgg (SEQ ID No: 122)
13	gag agg aaA cgg gcg gc (SEQ ID No: 123)
14	g cgt gga gaC gtc tac ac (SEQ ID No: 124)
15	t cgg aat gGc cag gag g (SEQ ID No: 125)
16	g ctg cct gAc gcc gag (SEQ ID No: 126)
17	c gac gtg gAg gtg tac c (SEQ ID No: 127)
18	g ccg cct gAc gcc gag (SEQ ID No: 128)
19	g cat gga gaC gtc tac ac (SEQ ID No: 129)
20	gc ctc cag aAc ccc atc a (SEQ ID No: 130)
21	g gag tac gcA cgc ttc ga (SEQ ID No: 131)
22	ccg cct gCc gcc gag (SEQ ID No: 132)
23	gg gcg gag Ttg gac acg (SEQ ID No: 133)
24	ac ccc atc aTc gtg gag t (SEQ ID No: 134)
25	gc gtg cgt cTt gtg acc a (SEQ ID No: 135)
26	g ctg ggg cCg cct gac (SEQ ID No: 136)
27	c ctg gag Agg acc cgg (SEQ ID No: 137)

Table 18B-2

Probe No.	Base Sequence
28	aac ggg acC gag cgc g ( SEQ ID No: 138)
29	ag ttg gac aCg gtg tgc a ( SEQ ID No: 139)
30	g gac acc gtA tgc aga ca ( SEQ ID No: 140)
31	g tat cgg gTg gtg acg c ( SEQ ID No: 141)
32	cc cag cat gcC g t gtc tac ( SEQ ID No: 142)
33	t ccc cag cAt gga gac g ( SEQ ID No: 143)
34	ag aag gaa gAc ctg gag ag ( SEQ ID No: 144)
35	g acc gag cTc gtg cgg ( SEQ ID No: 145)
36	g ggg cgg cTt gac gcc ( SEQ ID No: 146)
37	c ttc acc aaT ggg acg ga ( SEQ ID No: 147)
38	gcg gtg acC ccg cag g ( SEQ ID No: 148)
39	t gac cag gaA gag aca gc ( SEQ ID No: 149)
40	t gtg acc aga Tac atc tat aa ( SEQ ID No: 150)
41	gc ggg atc Ttg cag agg ( SEQ ID No: 151)
42	t gac tgg acT ttc cag atc ( SEQ ID No: 152)
43	g cgt ctt gtA acc aga cac ( SEQ ID No: 153)
44	tc aaa gtc cAg tgg ttt cg ( SEQ ID No: 154)
45	gtg tac cgC gcg gtg ac ( SEQ ID No: 155)
46	g gag agg Acc cgg gcg ( SEQ ID No: 156)
47	c gag gtg gGg tac cgc ( SEQ ID No: 157)
48	g cgt ctt gtA acc aga tac ( SEQ ID No: 158)
49	t gta acc aga Tac atc tat aac ( SEQ ID No: 159)
50	cgg cct gtC gcc gag t ( SEQ ID No: 160)
51	c cgg gcg gAg ttg gac ( SEQ ID No: 161)
52	g gtg gcg tTc cgc ggg ( SEQ ID No: 162)
53	gat gcc gag Aac tgg aac ( SEQ ID No: 163)
54	acg ccg cTg ggg cgg ( SEQ ID No: 164)



Table 19A

Allele Number	Probe Number for Detection		
DQA1*010101	0		
DQA1*010102	1		
DQA1*010201	2		
DQA1*010202	3	2	
DQA1*0103	4		
DQA1*010401	5		
DQA1*010402	6	7	
DQA1*0105	8		
DQA1*0106	9		
DQA1*0201	10		
DQA1*030101	11		
DQA1*0302	12		
DQA1*0303	13		
DQA1*040101	14	15	
DQA1*040102	16		
DQA1*050101	17	18	
DQA1*050102	19	20	
DQA1*0502	21		
DQA1*0503	22		
DQA1*0504	23		
DQA1*0505	24		
DQA1*060101	25	26	15
DQA1*060102	27		

Table 19B-1

Allele Number		Probe Number for Detection					
DQB1*050101	0	1	2	3			
DQB1*050102	4						
DQB1*050201	5						
DQB1*050202	6	7	8	4			
DQB1*050301	9	10	4				
DQB1*050302	6	11					
DQB1*0504	7	12					
DQB1*0201	13	14					
DQB1*0202	15	14					
DQB1*0203	16	15					
DQB1*030101	17	18	19	20			
DQB1*030102	17	18					
DQB1*0302	21	22	23	24			
DQB1*030302	18	23	24				
DQB1*030303	25	6	26	18	27	23	
DQB1*0304	17	22	19	20			
DQB1*030501	28	23					
DQB1*030502	6	22	27	29			
DQB1*0306	26	30					
DQB1*0307	31						
DQB1*0308	21	6	22	29			
DQB1*0309	32						
DQB1*0310	6	18	33	19	20		
DQB1*0311	21	6	22	27	29		
DQB1*0312	25	21	6	18	27	23	
DQB1*0313	34						
DQB1*0401	35						
DQB1*0402	36						
DQB1*060101	37						
DQB1*060102	38						
DQB1*060103	39						
DQB1*0602	40	41	42				
DQB1*0603	43	41	42				

Table 19B-2

Allele Number	Probe Number for Detection					
DQB1*060401	27	44				
DQB1*060402	43	45	27	46	47	
DQB1*060501	48	49	27	46	47	
DQB1*060502	48	50	27	46	51	
DQB1*0606	48	49	27	46		
DQB1*0607	43	11	27	46	47	
DQB1*0608	43	45	52			
DQB1*0609	49	27	44			
DQB1*0610	7	41				
DQB1*061101	40	45	11	52		
DQB1*061102	48	49	45	11	41	
DQB1*0612	49	44				
DQB1*0613	40	45	52			
DQB1*0614	43	45	11	41		
DQB1*0615	40	11	27	46	47	
DQB1*0616	53					
DQB1*0617	43	29				
DQB1*0618	48	27	41			
DQB1*0619	25	6	54	11	23	41
DQB1*0620	40	45	11			

Table 20A

Allele Number	Probe Number for Detection		
DQA1*010101	0		
DQA1*010102	1		
DQA1*010201	2		
DQA1*010202	3	2	
DQA1*0103	4		
DQA1*010401	5		
DQA1*010402	6	7	
DQA1*0105	6		
DQA1*0106	8		
DQA1*0201	9		
DQA1*030101	10		
DQA1*0302	11		
DQA1*0303	12		
DQA1*040101	13	14	
DQA1*040102	15		
DQA1*050101	16	17	
DQA1*050102	18	19	
DQA1*0502	20		
DQA1*0503	21		
DQA1*0504	22		
DQA1*0505	23		
DQA1*060101	24	25	14
DQA1*060102	26		

Table 20B-1

Allele Number	Probe Number for Detection					
	0	1	2	3		
DQB1*050101	0	1	2	3		
DQB1*050102	4					
DQB1*050201	5					
DQB1*050202	6	7	8	4		
DQB1*050301	9	10	4			
DQB1*050302	6	11				
DQB1*0504	7	12				
DQB1*0201	13	14				
DQB1*0202	15	14				
DQB1*0203	16	15				
DQB1*030101	17	18	19	20		
DQB1*030102	17	18				
DQB1*0302	21	22	23	24		
DQB1*030302	18	23	24			
DQB1*030303	25	6	26	18	27	23
DQB1*0304	17	22	19	20		
DQB1*030501	28	23				
DQB1*030502	6	22	27	29		
DQB1*0306	26	30				
DQB1*0307	31					
DQB1*0308	21	6	22	29		
DQB1*0309	32					
DQB1*0310	6	18	33	19	20	
DQB1*0311	21	6	22	27	29	
DQB1*0312	25	21	6	18	27	23
DQB1*0313	34					
DQB1*0401	35					
DQB1*0402	36					
DQB1*060101	37					
DQB1*060102	38					
DQB1*060103	39					
DQB1*0602	40	41	42			
DQB1*0603	43	41	42			

Table 20B-2

Allele Number	Probe Number for Detection					
DQB1*060401	27	44				
DQB1*060402	43	45	27	46	47	
DQB1*060501	48	49	27	46	47	
DQB1*060502	48	50	27	46	51	
DQB1*0606	48	49	27	46		
DQB1*0607	43	11	27	46	47	
DQB1*0608	43	45	52			
DQB1*0609	49	27	44			
DQB1*0610	7	41				
DQB1*061101	40	45	11	52		
DQB1*061102	48	49	45	11	41	
DQB1*0612	49	44				
DQB1*0613	40	45	52			
DQB1*0614	43	45	11	41		
DQB1*0615	40	11	27	46	47	
DQB1*0616	53					
DQB1*0617	43	29				
DQB1*0618	48	27	41			
DQB1*0619	25	6	54	11	23	41
DQB1*0620	40	45	11			

(Example 11)

Probes for identification of HLA-DR allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe list 1 in Tables 21-1 and 21-2 were used and 4  $\mu$ l of the mixed primers consisting of 1  $\mu$ l each of respective solutions of the following primers (10 pmol/ $\mu$ l) and 4  $\mu$ l of ultra pure water were used:

AGAGTACTCCAAGAAACGTG (SEQ ID NO: 822)  
CCGCTGCACCGTGAAGCT (SEQ ID NO: 823)  
15 TCGCTGCACTGTGAAGCT (SEQ ID NO: 824)  
CCTCTGCACTGTGAAGCT (SEQ ID NO: 825).

Referring to Amp Plot and Dissociation curves on a display of 5700 software, it was found that probes 62, 12, and 152 were amplified. Therefore, it was identified as DRB1\*040502 and DRB1\*130202 referring to the allele-probe list 1 (Tables 23-1 to 23-13).

(Example 12)

Extraction of DNA from 1 ml of human blood was performed in the same way as in Example 3. PCR of human HLA-DRB exon 2 was then performed in the same manner as in Example 2 except that 6  $\mu$ l of the mixed

primer consisting of 1  $\mu$ l each of the solutions containing the following sequences at 10 pmol/ $\mu$ l respectively, and 9  $\mu$ l of ultra pure water were used:

CCGGATCCTTCGTGTCCCCACAGCACG (SEQ ID NO: 826)

5 AACCCCGTAGTTGTGTCTGCA (SEQ ID NO: 827)

AGAGTACTCCAAGAAACGTG (SEQ ID NO: 822)

CCGCTGCACCGTGAAGCT (SEQ ID NO: 823)

TCGCTGCACTGTGAAGCT (SEQ ID NO: 824)

CCTCTGCACTGTGAAGCT (SEQ ID NO: 825).

10 At the same time, a DNA microarray was prepared to identify the allele in the specimen described above in the same manner as in Example 2, except that probes in the probe list of Tables 22-1 to 22-7 were used to form the probe spots respectively.

15 Then, hybridization was performed using the above specimen and the prepared DNA microarray in the same manner as in Example 2. The fluorometry measurement was conducted with GenePix4000B (Axon).

As a result it was found that probes 59, 133,  
20 and 134 were amplified. Therefore, it was identified as DRB1\*040502 and DRB1\*130202 referring to the allele-probe list 1 (Tables 24-1 to 24-13).

#### Allele list

25 DRB1\*010101 :

atggtagtgcgaagctccctggaggctcctgcatgacagcgctgacagtacacatgaaggtagctccccac  
tggctttggcggggacacccgaccacgtttcttggcagcttaagttgaatgtcatttcttcaatgggacgga



gcgggtgcggttgc tggAagaTgcatctataaccaagaggagtCcg tgcgcttcgacagcgacgtgggggaglac  
cgggcggtgacggagctggggcgcc tgaTgcCgagttac tggacagccagaaggacctctggagcagaggcggg  
ccgcggtggacacctac tgcagacacaactacgggggttgGtgagagcttcacagtcagcggcgag (SEQ ID  
NO: 1) ;

5 DRB1\*010102 :

cacgtttcttctggcagcttaagttgaatgtcat tttcttcaatgggacggagcgggtgcggttgc tggaaagatg  
catctataaccaagaggatccgtgcgcttcgacagcgacgtgggggagttaccgggcggtgacggagctggggcgg  
cc tga tccgagttac tggacagccagaaggacctctggagcagaggcgggcccgggtggacacctac tgcagac  
acaactacgggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 2) ;

10 DRB1\*010201 :

ggggacacccgaccacgtttcttctggcagcttaagttgaatgtcat tttcttcaatgggacggagcgggtgcggt  
tgc tggaaagatgcatctataaccaagaggagtcggtgcgcttcgacagcgacgtgggggagttaccgggcggtgac  
ggagctggggcgcc tga tccgagttac tggacagccagaaggacctctggagcagaggcgggcccgggtggac  
acctat tgcagacacaactacggggCgtggagagcttcacagtcagcggcgag (SEQ ID NO: 3) ;

15 DRB1\*010202 :

cacgtttcttctggcagcttaagttgaatgtcat tttcttcaatgggacggagcgggtgcggttgc tggaaagatg  
catctataaccaagaggagtcggtgcgcttcgacagcgacgtgggggagttaccgggcggtgacggagctggggcgg  
cc tga tccgagttac tggacagccagaaggacctctggagcagaggcgggcccGtggacacctat tgcagac  
acaactacggggctgtgg (SEQ ID NO: 4) ;

20 DRB1\*0103 :

atgg tgtgtctgaagctccctggaggctcttgc atgacagcgctgacagtacac tga tgg tgtgtgagctccccac  
tggctttggc tggggacacccgaccacgtttcttctggcagcttaagttgaatgtcat tttcttcaatgggacgga  
gcgggtgcggttgc tggaaagatgcatctataaccaagaggagtcggtgcgcttcgacagcgacgtgggggagttac  
cgggcggtgacggagctggggcgcc tga tccgagttac tggacagccagaaggacAtcttgaagacGAgcggg

25 ccgcggtggacacctac tgcagacacaactacgggggttggtgagagcttcacagtcagcggcgag (SEQ ID  
NO: 5) ;

DRB1\*0104 :

ggggacacccgaccacgtttcttggcagcttaagttgaaatgcatttcttcaatgggacggagcgggtgcggt  
tgc tggaaagatgcatctataaccaagaggagtcctgcttgcacagcgacgtgggggaglacgggcgggtgac  
ggagctggggcggccctgagccgagttac tggaaacagccagaaggacctcttggagcagaggcgggcccgggtggac  
aaTtactgcagacacaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 6) ;

5 DRB1\*0105 :

cacgtttcttggcagcttaagttgaaatgcatttcttcaatgggacggagcgggtgcggttgc tggaaagatg  
catctataaccaagaggagtcctgcttgcacagcgacgtAgggagtlaccgggcgggtgacggagctggggcgg  
ccctgagccgagttac tggaaacagccagaaggacctcttggagcagaggcgggcccgggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 7) ;

10 DRB1\*0106 :

cacgtttcttggcagcttaagttgaaatgcatttcttcaatgggacggagcgggtgcggttgc tggaaagatg  
catctataaccaagaggagtcctgcttgcacagcgacgtgggggagtlaccgggcgggtgacggagctggggcgg  
ccctgagccgagttac tggaaacagccagaaggacctcttggagcagggcgggcccgggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 8) ;

15 DRB1\*0107 :

cacgtttcttggGagcttaagttgaaatgcatttcttcaatgggacggagcgggtgcggttgc tggaaagatg  
catctataaccaagaggagtcctgcttgcacagcgacgtgggggagtlaccgggcgggtgacggagctggggcgg  
ccctgagccgagttac tggaaacagccagaaggacctcttggagcagaggcgggcccgggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 9) ;

20 DRB1\*0108 :

cacgtttcttggcagcttaagttgaaatgcatttcttcaatgggacggagcgggtgcggttgc tggaaagatg  
catctataaccaagaggagtcctgcttgcacagcgacgtgggggagtlaccgggcgggtgacggagctggggcgg  
ccctgagccgagttac tggaaacagccagaaggacctcttggagcagaggcgggcccgggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 10) ;

25 DRB1\*0109 :

cacgtttcttggcagcttaagttgaaatgcatttcttcaatgggacggagcgggtgcggttgc tggaaagatg  
catctataaccaagaggagtcctgcttgcacagcgacgtgggggagtlaccgggcgggtgacggagctggggcgg

ccTgaTgccgagTactTggaacagccagaaggaccTccTggagcagGCgcgggccgcggtTggacacTactTgcagac  
acaactacggggTlgtTgagagcTtcacagTgcagcggcgag (SEQ ID NO: 1 1) ;

DRB1\*0110 :

cacgTtTcTlgtTggcagcTtaagTtTgaatgtcattTcTtTcaatTgggacggagcgggtTgcgtTgctTggaaagatg  
5 calcTalaaccaagaggagTccgTgcgctTcgacagcgacgtTgggggagTaccgggcggtTgacggagcTggggcgg  
ccTgaTgccgagTactTggaacagccagaaggaccTccTggagcagaAgcgggccgcggtTggacacTactTgcagac  
acaactacggggTlgtTgagagcTtcacagTgcagcggcgag (SEQ ID NO: 1 2) ;

DRB1\*030101 :

ggggacaccagaccacgTtTcTlgtTgagTactTcTcTgTgTgTgTcattTcTtTcaatTgggacggagcgggtTgcgt  
10 AcctTggacagatacTtTcCataaccaggaggagAACgtTgcgctTcgacagcgacgtTgggggagTccgggcggtTgac  
ggagcTggggcggccTgaTgccgagTactTggaacagccagaaggaccTccTggagcagaagcggggccGggtTggac  
aActTactTgcagacacaactacggggTlgtTgagagcTtcacagTgcagcggcgag (SEQ ID NO: 1 3) ;

DRB1\*030102 :

cacgTtTcTlgtTgagTactTcTcTgTgTgTgTcattTcTtTcaatTgggacggagcgggtTgcgtTaccTggacagata  
15 cTtTccataaccaggaggagaacgtTgcgctTcgacagcgacgtTgggggagTccgggcggtTgacggagcTggggcgg  
ccTgaTgccgagTactTggaacagccagaaggaccTccTggagcagaagcggggccGggtTggacaaTtactTgcagac  
acaactacggggTlgtTgagagcTtcacagTgcagcg (SEQ ID NO: 1 4) ;

DRB1\*030201 :

ggggacaccagaccacgTtTcTlgtTgAgTactTcTcTgTgTgTgTcattTcTtTcaatTgggacggagcgggtTgcgt  
20 tccTggaGagatacTtTcCataaccaggaggagAACgtTgcgctTcgacagcgacgtTgggggagTaccgggcggtTgac  
ggagcTggggcggccTgaTgccgagTactTggaacagccagaaggaccTccTggagcagaagcggggccGggtTggac  
aActTactTgcagacacaactacggggTlgtTgagagcTtcacagTgcagcggcgag (SEQ ID NO: 1 5) ;

DRB1\*030202 :

ggggacaccagaccacgTtTcTlgtTgagTactTcTcTgTgTgTgTcattTcTtTcaatTgggacggagcgggtTgcgt  
25 tccTggaGagatacTtTcCataaccaggaggagAACgtTgcgctTcgacagcgacgtTgggggagTaccgggcggtTgac  
ggagcTggggcggccTgaTgccgagTactTggaacagccagaaggaccTccTggagcagaagcggggccGggtTggac  
aaTtactTgcagacacaactacggggTlgtTgagagcTtcacagTgcagcggcgag (SEQ ID NO: 1 6) ;

DRB1\*0303 :

tactctacgtctgagtgicatttcttcaatgggacggagcgggtgcggttccttgaGagatacttCataaccagg  
aggagAAcgtgcgcttcgacagcgacgtgggggagtagcgggcggtgacggagctggggcggccatgaccgagta  
ctggaacagccagaaggacctcctggagcagaagcggggccGggtggacaActactgcagacacaactacggggtt  
5 gtGgagagcttcacagtcagcggcgga (SEQ ID NO: 17) ;

DRB1\*0304 :

cacgtttcttggagtactctacgtctgagtgicatttcttcaatgggacggagcgggtgcggtAccitggacagata  
cttCataaccaGaggagtagcgttcgacagcgacgtgggggagtagcgggcggtgacggagctggggcgg  
ccatgaccgagtagtggaaacagccagaaggacctcctggagcagaagcggggccGggtggacaActactgcagac  
10 acaactacggggttgtGgagagcttcacagtcagcggcgga (SEQ ID NO: 18) ;

DRB1\*030501 :

cacgtttcttggagtactctacgtctgagtgicatttcttcaatgggacggagcgggtgcggtAccitggacagata  
cttCataaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagtagcgggcggtgacggagctggggcgg  
ccatgaccgagtagtggaaacagccagaaggacctcctggagcagaagcggggccGggtggacaActactgcagac  
15 acaactacggggttgtGgagagcttcacagtcagcggcgga (SEQ ID NO: 19) ;

DRB1\*030502 :

cacgtttcttggagtactctacgtctgagtgicatttcttcaatgggacggagcgggtgcggtaccitggacagata  
cttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagtagcgggcggtgacggagctggggcgg  
ccatgaccgagtagtggaaacagccagaaggacctcctggagcagaagcggggccgggtggacaActactgcagac  
20 acaactacggggttgtGgagagcttcacGgtgcagcggcgga (SEQ ID NO: 20) ;

DRB1\*0306 :

ttcttggagtactctacgtctgagtgicatttcttcaatgggacggagcgggtgcggtAccitggaCagatacttC  
ataaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagtagcgggcggtgacggagctggggcggccatg  
taccgagtagtggaaacagccagaaggacctcctggagcagaagcggggccGggtggacaActactgcagacacaac  
25 tacggggttgtGgagagcttcacagtcag (SEQ ID NO: 21) ;

DRB1\*0307 :

ggggacaccagaccacgtttcttggagtactctacgtctgagtgicatttcttcaatgggacggagcgggtgcggt

tcclggacagatacttcCataaccaggaggagAACgtgcgcttcgacagcgacgtgggggagtTccgggcggtagc  
ggagctggggcggccctgaltgccgagtagtggaaacagccagaaggacctccaggagcagaagcggggccGggtggac  
aActactgcagacacaactacggggtagtGgagagcttcacagtcagcggcgag (SEQ ID NO: 22) ;  
DRB1\*0308 :

5 ggggacaccagaccaggtttcttggagtagctacgtctgagtgctatttcttcaatgggacggagcgggtgcggt  
acctggacagatacttccataaccaggaggagAACgtgcgcttcgacagcgacgtgggggagtTccgggcggtagc  
ggagctggggcggccctgaltAGgagtagtggaaacagccagaaggacctccaggagcagaagcggggccGggtggac  
aActactgcagacacaactacggggtagtGgagagcttcacagtcagcggcgag (SEQ ID NO: 23) ;  
DRB1\*0309 :

10 ttggagtagctacgtctgagtgctatttcttcaatgggacggagcgggtgcggtacctggacagatacttccata  
accGggaggagaacgtgcgcttcgacagcgacgtgggggagtTccgggcggtagcggagctggggcggccctgaltgc  
cgagtagtggaaacagccagaaggacctccaggagcagaagcggggccgggtggacaactactgcagacacaactac  
ggggttggtagagcttcacagtcagcgg (SEQ ID NO: 24) ;  
DRB1\*0310 :

15 ggggacaccagaccaggtttcttggagtagctacgtctgagtgctatttcttcaatgggacggagcgggtgcggt  
acctggacagatacttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagtTccgggcggtagc  
ggagctggggcggccctgCtgcggagcactggaaacagccagaaggacctccaggagcagaagcggggccGggtggac  
aActactgcagacacaactacggggtagtGgagagcttcacagtcagcggcgag (SEQ ID NO: 25) ;  
DRB1\*0311 :

20 caggtttcttggagtagctacgtctgagtgctatttcttcaatgggacggagcgggtgcggtAccaggacagata  
cttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagtTccgggcggtagcggagctggggcgg  
ccctgaltgccgagtagtggaaacagccagaaggacctccaggagcagaagcggggccAGgtggacaActactgcagac  
acaactacggggtagtGgagagcttcacagtcagcggcga (SEQ ID NO: 26) ;  
DRB1\*0312 :

25 ttggagtagctacgtctgagtgctatttcttcaatgggacggagcgggtgcggtacctggacagatacttccata  
accaggaggagaacgtgcgcttcgacagcgacgtgggggagtTccgggcggtagcggagctggggcggccctagCgc  
cgagtagtggaaacagccagaaggacctccaggagcagaagcggggccGggtggacaActactgcagacacaactac

gggggtgtGgag (SEQ ID NO: 27) ;

DRB1\*0313 :

cacgtttcttggagtactctacgtctgagtgctatcttcaatgggacggagcgggtgcggtacctggacagata  
cttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
5 cctgatgccgagtcctggaacagccagaaggacctcctggagcagaagcggggccGggtggacaActactgcagac  
acaactacgggggtgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 28) ;

DRB1\*0314 :

cacgtttcttggagtactctacgtctgagtgctatcttcaatgggacggagcgggtgcggtAcctggacagata  
cttccataaccaggaggagAACgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
10 cctgatgccgagtcctggaacagccagaaggacctcctggagcagaagcggggccGggtggacacctactgcagac  
acaactacgggggtgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 29) ;

DRB1\*0315 :

cacgtttcttggagtactctacgtctgagtgctatcttcaatgggacggagcgggtgcggtAcctggacagata  
cttccataaccaggaggagAACgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
15 cctgatgccgagtcctggaacagccagaaggacctcctggagcagaagcggggccGggtggacacctactgcagac  
acaactacgggggtgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 30) ;

DRB1\*0316 :

cacgtttcttggagtactctacgtctgagtgctatcttcaatgggacggagcgggtgcggtacctggacagata  
cttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
20 cctgatgccgagtcctggaacagccagaaggacctcctggagcagaagcggggccgggtggacaactactgcagac  
acaactacgggggtgtg (SEQ ID NO: 31) ;

DRB1\*0317 :

cacgtttcttggagtactctacgtctgagtgctatcttcaatgggacggagcgggtgcggttccctggaCagata  
cttctataaccaagaggagAACgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
25 cctgatgccgagtcctggaacagccagaaggacctcctggagcagaagcggggccaggaggacaaTtactgcagac  
acaactacgggggtgtgagagcttcacagtcagcggcgag (SEQ ID NO: 32) ;

DRB1\*0318 :

cacgtttcttggagtlacttactgtctgagtgctatcttcaatgggacggagcgggtgcggtacctggacagata  
cttccataaccaggaggagaacgtgcgtctcgacagcgacgtgCgggagttccgggcggtagcggagctggggcgg  
cctgatgccgagtlactggaacagccagaaggacctcttggagcagaagcggggccgggtggacaactactgcagac  
acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 3 3) ;

5 DRB1\*0319 :

cacgtttcttggagtlacttactgtctgagtgctatcttcaatgggacggagcgggtgcggtacctggacagata  
cttccataaccaggaggagaacgtgcgtctcgacagcgacgtgggggagttccgggcggtagcggagctggggcgg  
cctgatgccgagtlactggaacagccagaaggacAtcttggagcagaagcggggccGggtggacaActactgcagac  
acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 3 4) ;

10 DRB1\*0320 :

cacgtttcttggagtlacttactgtctgagtgctatcttcaatgggacggagcgggtgcggtacctggacagata  
cttccataaccaggaggagaacgtgcgtctcgacagcgacgtgggggagttccgggcggtagcggagctggggcgg  
cctgatgccgagtlactggaacagccagaaggacctcttggagcagaagcggggccgggtggacaActactgcagac  
acaactacggggCtgtggagagcttcacagtcagcgg (SEQ ID NO: 3 5) ;

15 DRB1\*0321 :

cgtttcttggagtlacttactgtctgagtgctatcttcaatgggacggagcgggtgcggtacctggacagatact  
ttccataaccaggaggagttCgtgcgtctcgacagcgacgtgggggagttccgggcggtagcggagctggggcggcc  
tgatgccgagtlactggaacagccagaaggacctcttggagcagaagcggggccGggtggacaActactgcagacac  
aaactacggggttgtGgagagcttcacagtcagcggcga (SEQ ID NO: 3 6) ;

20 DRB1\*0322 :

tttcttggagtlacttactgtctgagtgctatcttcaatgggacggagcgggtgcggtacctggacagatactt  
Gataaccaggaggagaacgtgcgtctcgacagcgacgtgggggagttccgggcggtagcggagctggggcggcc  
atgccgagtlactggaacagccagaaggacctcttggagcagaagcggggccgggtggacaactactgcagacacaa  
ctacggggttgtggagagcttcacagtcagcggcgag (SEQ ID NO: 3 7) ;

25 DRB1\*0323 :

cacgtttcttggagtlacttactgtctgagtgctatcttcaatgggacggagcgggtgcggtacctggacagata  
cttccataaccGggaggagaacgtgcgtctcgacagcgacgtgggggagttccgggcggtagcggagctggggcgg

cctgaltgccgagtlactlgaacagccagaaggacctccctggagcagaagcggggccgggtggacaactlactgcagac  
acaactacggggltlgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 38) ;

DRB1\*0324 :

cacgttlctltggagtlactlactgltcgtgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagata  
5 cttccataaaccaggaggagaacgtgcgttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcgg  
cctgaltgccgagtlactlgaacagccagaaggacctccctggagcagaagcggggcCAGgtggacaaTlactgcagac  
acaactacggggltlgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 39) ;

DRB1\*0325 :

cacgttlctltggagtlactlactgltcgtgagtgatcttcttcaatgggacggagcgggtgcggtTaccctggacagata  
10 ctttCataaccaGgaggagtAcgtgcgttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcgg  
cctgaltgccgagtlactlgaacagccagaaggacctccctggagcagaagcggggcGggtggacaActlactgcagac  
acaactacggggltlgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 40) ;

DRB1\*040101 :

atgggtgtgtcgaagTlccctggaggctccctgcatggcagctctgacagtgacactgaltgggtgtgagctccccac  
15 tggctltggctlgggacacccgaccacgttlctltggagcaggltaaacalagagtgatcttcttcaacgggacgga  
gcgggtgcggttccctggacagatacttctatcaccaagaggagtlacgtgcgttcgacagcgacgtgggggagtlac  
cgggcggtgacggagctggggcggcctgaltgccgagtlactlgaacagccagaaggacctccctggagcagaAgcggg  
ccgcggltggacacclactgcagacacaactacggggltggltgagagcttcacagtcagcggcgag (SEQ ID  
NO: 41) ;

20 DRB1\*040102 :

cacgttlctltggagcaggltaaacalagagtgatcttcttcaacgggacggagcgggtgcggttccctggacagata  
cttctatcaccaagaAgagtlacgtgcgttcgacagcgacgtgggggagtlaccgggcggtgacggagctggggcgg  
cctgaltgccgagtlactlgaacagccagaaggacctccctggagcagaagcggggcgcggtggacacclactgcagac  
acaactacggggltggltgagagcttcacagtcagcggcgag (SEQ ID NO: 42) ;

25 DRB1\*0402 :

atgggtgtgtcgaagTlccctggaggctccctgcatggcagctctgacagtgacactgaltgggtgtgagctccccac  
tggctltggctlgggacacccgaccacgttlctltggagcaggltaaacalagagtgatcttcttcaacgggacgga



gcgggigcgggttccigggacagatacttctatcaccaagaggagtagctgcgcttcgacagcgacgtgggggagtag  
cgggcggtagcggagctggggcggccgtgagccgagtagctggaacagccagaaggacatcciggaagacgAgcggg  
ccgcggtagcacctactgcagacacaactacgggggttgtGgagagcttcacagtagcagcggcgag (SEQ ID  
NO: 4 3) ;

5 DRBI\*040301 :

ggggacacccgaccacgtttcttggagcagggtaaaCatgagtgtagctttcttcaacgggacggagcgggtgcgggt  
tccigggacagatacttctatcaccaagaggagtagctgcgcttcgacagcgacgtgggggagtagcgggcggtagc  
ggagctggggcggccgtgagccgagtagctggaacagccagaaggacctccigggagcagaggcgggcccAggtggac  
acctactgcagacacaactacgggggttgtGgagagcttcacagtagcagcggcgag (SEQ ID NO: 4 4) ;

10 DRBI\*040302 :

cacgtttcttggagcagggtaaaCatgagtgtagctttcttcaacgggacggagcgggtgcgggttccigggacagata  
cttctatcaccaagaggagtagctgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
ccgtgacgtgtagtagctggaacagccagaaggacctccigggagcagaggcgggcccAggtggacacctactgcagac  
acaactacgggggttgtGgagagcttcacagtagcagcggcgag (SEQ ID NO: 4 5) ;

15 DRBI\*0404 :

atgggtgtgtctgaagTtcccggaggcttctgcatggcagctctgacagtgacactgtaggtgtctgagctccccac  
tggctttggctggggacacccgaccacgtttcttggagcagggtaaacatgagtgtagctttcttcaacgggacgga  
gcgggtgcgggttccigggacagatacttctatcaccaagaggagtagctgcgcttcgacagcgacgtgggggagtag  
cgggcggtagcggagctggggcggccgtgagccgagtagctggaacagccagaaggacctccigggagcagaggcggg

20 ccgcggtagcacctactgcagacacaactacgggggttgtGgagagcttcacagtagcagcggcgag (SEQ ID  
NO: 4 6) ;

DRBI\*040501 :

ggggacacccgaccacgtttcttggagcagggtaaaCAtagagtgtagctttcttcaacgggacggagcgggtgcgggt  
tccigggacagatacttctatCaccaagaggagtagctgcgcttcgacagcgacgtgggggagtagcgggcggtagc  
ggagctggggcggccgtGgcccagtagctggaacagccagaaggacctccigggagcagaggcgggcccgggtggac  
acctactgcagacacaactacgggggttgtGgagagcttcacagtagcagcggcga (SEQ ID NO: 4 7) ;

DRBI\*040502 :

cacgtttcttggagcagggttaaaca|gagtg|cat|t|t|t|caacgggacggagcgggtgcggt|cc|tggacagata  
c|t|c|a|t|c|c|a|a|g|a|g|g|a|g|t|a|c|g|t|c|g|c|t|c|g|a|c|a|g|c|g|a|c|g|t|g|g|g|g|a|g|t|a|c|c|g|g|g|c|g|g|t|g|a|c|g|g|a|g|c|t|g|g|g|c|g|g|  
c|c|t|a|g|c|g|c|c|g|a|g|t|a|c|t|g|g|a|a|c|a|g|c|c|a|a|g|g|a|c|c|t|c|c|t|g|g|a|g|c|a|g|a|g|g|c|g|g|g|c|c|g|g|t|g|g|a|c|a|c|t|a|c|t|g|c|a|g|a|c|  
a|a|a|c|t|a|c|g|g|g|t|g|g|t|g|a|g|a|g|c|t|c|a|c|a|g|t|c|a|g|c|g|g|c|g|a|g|(SEQ ID NO: 48) ;

5 DRB1\*040503 :

cacgtttcttggagcagggttaaaca|gagtg|cat|t|t|t|t|caacgggacggagcgggtgcggt|cc|tggacagata  
c|t|c|a|t|c|c|a|a|g|a|g|g|a|g|t|a|c|g|t|c|g|c|t|c|g|a|c|a|g|c|g|a|c|g|t|g|g|g|g|a|g|t|a|c|c|g|g|g|c|g|g|t|g|a|c|g|g|a|g|c|t|g|g|g|c|g|g|  
c|c|t|a|g|c|g|c|c|g|a|g|t|a|c|t|g|g|a|a|c|a|g|c|c|a|a|g|g|a|c|c|t|c|c|t|g|g|a|g|c|a|g|a|g|g|c|g|g|g|c|c|g|g|t|g|g|a|c|a|c|t|a|c|t|g|c|a|g|a|c|  
a|a|a|c|t|a|c|g|g|g|t|g|g|t|g|a|g|a|g|c|t|c|a|c|a|g|t|c|a|g|c|g|g|c|g|a|g|(SEQ ID NO: 49) ;

10 DRB1\*040504 :

cacgtttcttggagcagggttaaaca|gagtg|cat|t|t|t|t|caacgggacggagcgggtgcggt|cc|tggacagata  
c|t|c|a|t|c|c|a|a|g|a|g|g|a|g|t|a|c|g|t|c|g|c|t|c|g|a|c|a|g|c|g|a|c|g|t|g|g|g|g|a|g|t|a|c|c|g|g|g|c|g|g|t|g|a|c|g|g|a|g|c|t|g|g|g|c|g|g|  
c|c|t|a|g|c|g|c|c|g|a|g|t|a|c|t|g|g|a|a|c|a|g|c|c|a|a|g|g|a|c|c|t|c|c|t|g|g|a|g|c|a|g|a|g|g|c|g|g|g|c|c|g|g|t|g|g|a|c|a|c|t|a|c|t|g|c|a|g|a|c|  
a|a|a|c|t|a|c|g|g|g|t|g|g|t|g|a|g|a|g|c|t|c|a|c|a|g|t|c|a|g|c|g|g|c|g|a|g|(SEQ ID NO: 50) ;

15 DRB1\*0406 :

ggggacacccgaccacgt|t|t|t|t|t|ggagcagggt|aaa|Ca|gag|tg|cat|t|t|t|t|t|caacgggacggagcgggtgcggt  
t|c|c|t|g|g|a|c|a|g|a|t|a|c|t|t|c|a|t|c|c|a|a|g|a|g|g|a|g|t|c|c|g|t|g|c|g|t|t|c|g|a|c|a|g|c|g|a|c|g|t|g|g|g|g|a|g|t|a|c|c|g|g|g|c|g|g|t|g|a|c|  
g|g|a|g|c|t|g|g|g|g|c|g|g|c|t|g|a|t|g|c|c|g|a|g|t|a|c|t|g|g|a|a|c|a|g|c|c|a|a|g|g|a|c|c|t|c|c|t|g|g|a|g|c|a|g|a|g|g|c|g|g|g|c|c|g|g|t|g|g|a|c|  
a|c|t|a|c|t|g|c|a|g|a|c|a|a|c|t|a|c|g|g|g|t|g|t|g|g|a|g|a|g|c|t|c|a|c|a|g|t|c|a|g|c|g|g|c|g|a|g|(SEQ ID NO: 51) ;

20 DRB1\*040701 :

ggggacacccgaccacgt|t|t|t|t|t|ggagcagggt|aaa|Ca|gag|tg|cat|t|t|t|t|t|caacgggacggagcgggtgcggt  
t|c|c|t|g|g|a|c|a|g|a|t|a|c|t|t|c|a|t|c|c|a|a|g|a|g|g|a|g|t|a|c|g|t|g|c|g|t|t|c|g|a|c|a|g|c|g|a|c|g|t|g|g|g|g|a|g|t|a|c|c|g|g|g|c|g|g|t|g|a|c|  
g|g|a|g|c|t|g|g|g|g|c|g|g|c|t|g|a|t|g|c|c|g|a|g|t|a|c|t|g|g|a|a|c|a|g|c|c|a|a|g|g|a|c|c|t|c|c|t|g|g|a|g|c|a|g|a|g|g|c|g|g|g|c|c|g|g|t|g|g|a|c|  
a|c|t|a|c|t|g|c|a|g|a|c|a|a|c|t|a|c|g|g|g|t|g|g|t|g|a|g|a|g|c|t|c|a|c|a|g|t|c|a|g|c|g|g|c|g|a|g|(SEQ ID NO: 52) ;

25 DRB1\*040702 :

cacgtttcttggagcagggttaaaca|gagtg|cat|t|t|t|t|caacgggacggagcgggtgcggt|cc|tggacagata  
c|t|c|a|t|c|c|a|a|g|a|g|g|a|g|t|a|c|g|t|c|g|c|t|c|g|a|c|a|g|c|g|a|c|g|t|g|g|g|g|a|g|t|a|c|c|g|g|g|c|g|g|t|g|a|c|g|g|a|g|c|t|g|g|g|c|g|g|

ccatgagccgagtagctggaacagccagaaggacctccctggagcagagAcgggccgaggtaggacacctactgcagac  
acaactacggggttggtgagagcttcacagtcagcgg(SEQ ID NO: 53) ;

DRBI\*0408 :

ttctctggagcaggtagaACAtagtgatcttcttcaacgggacggagcgggtgcggttccctggacagatcttct  
5 tatCaccaagaggagtagctgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgccctg  
atgccgagtagctggaacagccagaaggacctccctggagcagagcgggccggtggacacctactgcagacacaa  
ctacggggttggtgagagcttcacagtcagcggcgag(SEQ ID NO: 54) ;

DRBI\*0409 :

tgagtgatcttcttcaacgggacggagcgggtgcggttccctggacagatcttctatCaccaagaggagtagctg  
10 cgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgccctagcggcgagtagctggaacagcc  
agaaggacctccctggagcagaAgcgggccggtggacacctactgcagacacaaactacggggttggtgagag(SE  
Q ID NO: 55) ;

DRBI\*0410 :

ttctctggagcaggtagaacaatgagtgatcttcttcaacgggacggagcgggtgcggttccctggacagatcttct  
15 tatCaccaagaggagtagctgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgccctag  
Cgcccgagtagctggaacagccagaaggacctccctggagcagagcgggccggtggacacctactgcagacacaa  
ctacggggttggtgagagcttcacagtcagcggcgag(SEQ ID NO: 56) ;

DRBI\*0411 :

atggtgtgtctgaagTtccctggaggctccctgcatggcagctctgacagtagacctgattggtgtgagctcccccac  
20 tggctttggctggggacacccgaccacgttctctggagcaggtagaacaatgagtgatcttcttcaacgggacgga  
gcgggtgcggttccctggacagatcttctatCaccaagaggagtagctgcgcttcgacagcgacgtgggggagtag  
cgggcggtagcggagctggggcgccctagcggcgagtagctggaacagccagaaggacctccctggagcagagcggg  
ccgAggtggacacctactgcagacacaaactacggggttggtgagagcttcacagtcagcggcgag(SEQ ID  
NO: 57) ;

25 DRBI\*0412 :

ttctctggagcaggtagaacaatgagtgatcttcttcaacgggacggagcgggtgcggttccctggacagatcttct  
atCaccaagaggagtagctgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgccctag

cgccgaglac tggaaacagccagaaggacA tcc tggaaacagggcggccTgg tggacacctac tgcagacacaac  
tacgggg t t g tGgagagc t t c a c a g t g c a g c g g (SEQ ID NO: 58) ;

DRB1\*0413 :

ca t g a g t g c a t t t c t t c a a c g g g a c g g a g c g g g t g c g g t t c c t g g a c a g a t a c t t c t a t C a c c a a g a g g a g t a c g  
5 t g c g t t c g a c a g c g a c g t g g g g a g t a c c g g g c g g t g a c g g a g c t g g g c g g c c t g a t g c c g a g t a c t g g a a c a g  
c c a a g g a c c t c c t g g a g c a g a A g c g g g c c g c g g t g g a c a c c t a c t g c a g a c a c a a c t a c g g g g t t g t G g a g a g c  
t t c a c a (SEQ ID NO: 59) ;

DRB1\*0414 :

t g a g t g c a t t t c t t c a a c g g g a c g g a g c g g g t g c g g t t c c t g g a c a g a t a c t t c t a t C a c c a a g a g g a g t a c g t g  
10 c g c t t c g a c a g c g a c g t g g g g a g t a c c g g g c g g t g a c g g a g c t g g g c g g c c t g a t g c c g a g t a c t g g a a c a g c c  
a g a a g g a c A t c c t g g a a g a c G a g c g g g c c g c g g t g g a c a c c t a c t g c a g a c a c a a c t a c g g g g t t g g t g a g a g (SE  
Q ID NO: 60) ;

DRB1\*0415 :

c a c g t t t c t t g g a g c a g g t t a a a C a t g a g t g c a t t t c t t c a a c g g g a c g g a g c g g g t g c g g t t c c t g g a c a g a t a  
15 c t t c t a t c a c c a a g a g g a g t a c g t g c g t t c g a c a g c g a c g t g g g g a g t a c c g g g c g g t g a c g g a g c t g g g c g g  
c c t g a t a G g a g t a c t g g a a c a g c c a g a a g g a c T t c c t g g a a g a C a g g c g g g c c g c g g t g g a c a c c t a c t g c a g a c  
a c a a c t a c g g g g t t g t G g a g a g (SEQ ID NO: 61) ;

DRB1\*0416 :

a t g a g t g c a t t t c t t c a a c g g g a c g g a g c g g g t g c g g t t c c t g g a c a g a t a c t t c t a t c a c c a a g a g g a g t a c g t  
20 g c g c t t c g a c a g c g a c g t g g g g a g t a c c g g g c g g t g a c g g a g c t g g g c g g c c t g a t g c c C a g t a c t g g a a c a g c  
c a g a a g g a c c t c c t g g a g c a g a a g c g g g c c g c g g t g g a e a c c t a c t g c a g a c a c a a c t a c g g g g t t g g t g (SEQ  
ID NO: 62) ;

DRB1\*0417 :

a t g a g t g c a t t t c t t c a a c g g g a c g g a g c g g g t g c g g t t c c t g g a c a g a t a c t t c t a t C a c c a a g a g g a g t a c g t  
25 g c g c t t c g a c a g c g a c g t g g g g a g t a c c g g g c g g t g a c g g a g c t g g g c g g c c t a G c c c g a g t a c t g g a a c a g c  
c a g a a g g a c c t c c t g g a g c a g a g g c g g g c c g A g g t g g a c a c c t a c t g c a g a c a c a a c t a c g g g g t t g g t (SEQ ID  
NO: 63) ;

DRB1\*0418 :

atgagtgatcatttcttcaacgggacggagcgggtgcggttccTggacagatacttctatCaccaagaggagtagt  
gcgcttcgacagcgacgtgggggagtagcggcggtgacggagcTggggcgccTgatgccgagtagtggaacagc  
cagaaggacAtccTggaagacaggcggggccTggtggacacctactgcagacacaactacggggTgtGgagagct  
5 ttcacagtga (SEQ ID NO: 64) ;

DRB1\*0419 :

tttctTggagcaggTtaaACAtagtgtagtatttcttcaacgggacggagcgggtgcggttccTggacagatacttct  
tatCaccaagaggagtagcgtgcgcttcgacagcgacgtgggggagtagcggcggtgacggagcTggggcgccTg  
atgccgagtagtggaacagccagaaggacctccTggagcagaggcggggccgcggtggacacctactgcagacacaa  
10 ctacggggTtggtagagcttcacagtgcagcggcgag (SEQ ID NO: 65) ;

DRB1\*0420 :

atgagtgtagtatttcttcaacgggacggagcgggtgcggttccTggacagatacttctatCaccaagaggagtagcgt  
gcgcttcgacagcgacgtgggggagtagcggcggtgacggagcTggggcgccTgatgccgagtagtggaacagc  
cagaaggacctccTggagcagaggcggggccAggtggacacctactgcagacacaactacggggTgtg (SEQ  
15 ID NO: 66) ;

DRB1\*0421 :

gagcaggTtaaacaTgagtgtagtatttcttcaacgggacggagcgggtgcggttccTggacagatacttctatCacc  
aagaggagtagcgtgcgcttcgacagcgacgtgggggagtagcggcggtgacggagcTggggcgccTgatgccga  
gtacttggaacagccagaaggacctccTggagcagaAgcggggccgcggtggacacctactgcagacacaactacggg  
20 gtTgtgtagagcttcacagt (SEQ ID NO: 67) ;

DRB1\*0422 :

gagcaggTtaaacaTgagtgtagtatttcttcaacgggacggagcgggtgcggttccTggacagatacttctatCacc  
aagaggagTAcgtgcgcttcgacagcgacgtgggggagtagcggcggtgacggagcTggggcgccTgatgccga  
gtacttggaacagccagaaggacctccTggagcagaagcggggccGgtggacaActactgcagacacaactacggg  
25 gtTgtGgagagcttcaca (SEQ ID NO: 68) ;

DRB1\*0423 :

cacgtttctTggagcaggTtaaacaTgagtgtagtatttcttcaacgggacggagcgggtgcggttccTggacagata

cttctatcaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcggcggtgacggagctggggcgg  
ccigatgccgagtagtgaacagccagaaggacctccctggagcagaggcgggccgggtggacacctactgcagac  
acaactacggggtagtgagagattcacagtcagcggcgag (SEQ ID NO: 69) ;

DRB1\*0424 :

5 cactttcttggagcaggtaaacaatgagtgcatcttctcaacgggacggagcgggtgcggttccctggacagata  
cttctatcaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcggcggtgacggagctggggcgg  
ccatGcggcagtagtgaacagccagaaggacctccctggagcGgaggcgggccgggtggacacctactgcagac  
acaactacggggtagtgagagcttcacagtcagcggcgag (SEQ ID NO: 70) ;

DRB1\*0425 :

10 tggagcaggtaaacaatgagtgcatcttctcaacgggacggagcgggtgcggttccctggacagatacttctatC  
accaagaggagtagtgcgcttcgacagcgacgtgggggagtagcggcggtgacggagctggggcggccigatgc  
cgagtagtgaacagccagaaggacttccctggaagacaggcggggcccTggtagacacctactgcagacacaactac  
ggggttagtgagag (SEQ ID NO: 71) ;

DRB1\*0426 :

15 cactttcttggagcaggtaaacaatgagtgcatcttctcaacgggacggagcgggtgcggttccctggacagata  
cttctatcaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcggcggtgacggagctggggcgg  
ccigatAccgagtagtgaacagccagaaggacctccctggagcagaagcgggccgggtggacacctactgcagac  
acaactacggggtagtg (SEQ ID NO: 72) ;

DRB1\*0427 :

20 cactttcttggagcaggtaaacaatgagtgcatcttctcaacgggacggagcgggtgcggttccctggacagata  
cttctatcaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcggcggtgacggagctggggcgg  
ccigatgccgagtagtgaacagccagaaggacctccctggagcagaggcgggccgAggtggacacctactgcagac  
acaactacggggCtggagagcttcacagt (SEQ ID NO: 73) ;

DRB1\*0428 :

25 cactttcttggagcaggtaaacaatgagtgcatcttctcaacgggacggagcgggtgcggttccctggacagata  
cttctatCaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcggcggtgacggagctggggcgg  
ccatGcggcagtagtgaacagccagaaggacctccctggagcagaggcgggccgggtggacacctactgcagac

acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 7 4) ;

DRB1\*0429 :

cacgtttcttggagcaggtaaacaatgagtgatcttcttcaacgggacggagcgggtgcggttccitggacagata  
cttctatcaccaagaggagtagctgcgttcgacagcgacgtgggggagtagcgggcgggtgaTggagctggggcgg  
5 cctagcggcgagtagtggacagccagaaggaccttctggagcagaggcgggccgggtggacacctactgcagac  
acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 7 5) ;

DRB1\*0430 :

cacgtttcttggagcaggtaaacaatgagtgatcttcttcaacgggacggagcgggtgcggttccitggacagata  
cttctatcaccaagaggagtagctgcgttcgacagcgacgtgggggagtagcgggTggtagcggagctggggcgg  
10 cctagcggcgagtagtggacagccagaaggaccttctggagcagaggcgggccgggtggacacctactgcagac  
acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 7 6) ;

DRB1\*0431 :

cacgtttcttggagcaggtaaacaatgagtgatcttcttcaacgggacggagcgggtgcggttccitggacagata  
cttctatCaccaagaggagtagctgcgttcgacagcgacgtgggggagtagcgggcgggtgacggagctggggcgg  
15 cctgatgccgagtagtggacagccagaaggaccttctggagcagaggcgggccCTggtagcacctactgcagac  
acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 7 7) ;

DRB1\*0432 :

ttggagcaggtaaacaatgagtgatcttcttcaacgggacggagcgggtgcggttccitggacagatacttctatc  
accaagaggagtagctgcgttcgacagcgacgtgggggagtagcgggcgggtgacggagctggggcggcctgatgc  
20 cgagtagcggagtagtggacagccagaaggaccttctggagcagaggcAgggccgggtggacacctactgcagacacaactac  
ggggttgtaggag (SEQ ID NO: 7 8) ;

DRB1\*0433 :

cacgtttcttggagcaggtaaacaatgagtgatcttcttcaacgggacggagcgggtgcggttccitggacagata  
cttctatcaccaagaggagtagctgcActtcgacagcgacgtgggggagtagcgggcgggtgacggagctggggcgg  
25 cctgatgccgagtagtggacagccagaaggaccttctggagcagaaggcgggccgggtggacacctactgcagac  
acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 7 9) ;

DRB1\*0434 :

tttcttggagcagggtaaaCCtgagtgatcttcttcaacgggacggagcgggtgcggttccctggacagatacttct  
tattaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgccctg  
atgccgagtagtggaacagccagaaggaccttctggagcagaAgcgggcccgggtggacacctactgcagacacaa  
ctacggggttggtga (SEQ ID NO: 80) ;

## 5 DRB1\*0435 :

cacgtttcttggagcagggtaaaCatgagtgatcttcttcaacgggacggagcgggtgcggttccctggacagata  
cttcttaccaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgcc  
ctgtagccgagtagtggaacagccagaaggaccttctggagcagaAgcgggcccgggtggacacctactgcagac  
acaactacggggttggtgagagcttcacagtg (SEQ ID NO: 81) ;

## 10 DRB1\*0436 :

cacgtttcttggagcagggtaaaCatgagtgatcttcttcaacgggacggagcgggtgcggttccctggacagata  
cttcttaccaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgcc  
ctgtagccgagtagtggaacagccagaaggaccttctggagaGaggcgggcccgggtggacacctactgcagac  
acaactacggggttggtgagagcttcacagtgagcgcgag (SEQ ID NO: 82) ;

## 15 DRB1\*0437 :

cacgtttcttggagcagggtaaaCatgagtgatcttcttcaacgggacggagcgggtgcggttccctggacagata  
cttcttaccaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgcc  
ctgtagccgagtagtggaacagccagaaggaccttctggagaGaggcgggcccgggtggacacctactgcagac  
acaactacggggttggtgagagcttcacagtgagcgcgag (SEQ ID NO: 83) ;

## 20 DRB1\*0438 :

cacgtttcttggagcagggtaaaCatgagtgatcttcttcaacgggacggagcgggtgcggttccctggacagata  
cttcttaccaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgcc  
ctgtagccgagtagtggaacagccagaaggaccttctggagcagaAgcgggcccgggtggacacctactgcagac  
acaactacggggttggtgagagcttcacagtgagcgcgag (SEQ ID NO: 84) ;

## 25 DRB1\*0439 :

cacgtttcttggagcagggtaaacatgagtgatcttcttcaacgggacggagcgggtgcggttccctggacagata  
cttcttaccaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgcc



ccatgatgccgagttacatggaacagccagaaggacctccatggagcagaggcgggcccggatggacacctactgcagac  
acaactacggggttgtggagagcttcacagtcagcgg (SEQ ID NO: 85) ;

DRB1\*0440 :

cacgtttcttggagcaggatlaaacaatgagtgatcatttcttcaacgggacggagcgggtgcggttccatggacagata  
5 cttctatcaccaagaggagttacgtgcgttcgacagcgacgtgggggagttaccggcggtgacggagctggggcgg  
ccatgatgccgagttacatggaacagccagaaggacctccatggagcagaggcgggcccggatggacacctactgcagac  
acaactacggggttgtggagagcttcacagtcagcgg (SEQ ID NO: 86) ;

DRB1\*0441 :

cacgtttcttggagcaggatlaaacaatgagtgatcatttcttcaacgggacggagcgggtgcggttccatggacagata  
10 cttctatcaccaagaggagAACgtgcgttcgacagcgacgtgggggagttaccggcggtgacggagctggggcgg  
ccatgatgccgagttacatggaacagccagaaggacctccatggagcagaggcgggcccggatggacacctactgcagac  
acaactacggggttgtggagagcttcacagtcagcgg (SEQ ID NO: 87) ;

DRB1\*0442 :

cacgtttcttggagcaggatlaaacaatgagtgatcatttcttcaacgggacggagcgggtgcggttccatggacagata  
15 cttctatcaccaagaggagttacgtgcgttcgacagcgacgtgggggagttaccggcggtgacggagctggggcgg  
ccatgatgccgagttacatggaacagccagaaggacctccatggagcagaggcgggcccggatggacacctactgcagac  
acaactacggggttgtggagagcttcacagtcagcggcgg (SEQ ID NO: 88) ;

DRB1\*0443 :

cacgtttcttggagcaggatlaaacaatgagtgatcatttcttcaacgggacggagcgggtgcggttccatggacagata  
20 cttctatcaccaagaggagttacgtgcgttcgacagcgacgtgggggagttaccggcggtgacggagctggggcgg  
ccatgatgccgagttacatggaacagccagaaggacctccatggagcagaggcgggcccggatggacacctactgcagac  
acaactacggggttgtggagagcttcacagtcagcgg (SEQ ID NO: 89) ;

DRB1\*0444 :

cacgtttcttggagcaggatlaaacaatgagtgatcatttcttcaacgggacggagcgggtgcggttccatggacagata  
25 cttctatcaccaagaggagttacgtgcgttcgacagcgacgtgggggagttaccggcggtgacggagctggggcgg  
ccatgatgccgagttacatggaacagccagaaggacctccatggagcagaggcgggcccggatggacacctactgcagac  
acaactacggggttgtggagagcttcacagtcagc (SEQ ID NO: 90) ;

DRB1\*070101 :

atggigtgicigaagctccctggaggctccctgcaaggcagctcagacagacacgaaggigtgagctccac  
tggctttggcggggacacccAaccacgttccctgtggcagggttaagataaagtgatcttcaacgggacgga  
gcgggtgcagttccctggaaagactcttctataaccaggaggagttcgtgcgttcgacagcgacgtgggggagtac  
5 cgggcggtagcggagctaggcggtgtcgtccgagttcctggaacagccagaaggacatccctggaggacaggcggg  
gcCaggtggacaccgtGtcagacacaactacgggttggtagagcttcacagtcagcggcgag (SEQ ID  
NO: 9 1) ;

DRB1\*070102 :

cacgttccctgtggcagggttaaAtataaagtgatcttcaacgggacggagcgggtgcagttccctggaaagact  
10 ctctataaccaggaggagttcgtgcgttcgacagcgacgtgggggagttaccgggcggtagcggagctAgggcgg  
ccgtcgtccgagttcctggaacagccagaaggacatccctggaggacaggcggggccaggtagcaccgtGtcagac  
acaactacgggttggtag (SEQ ID NO: 9 2) ;

DRB1\*0703 :

cacgttccctgtggcagggttaagataaagtgatcttcaacgggacggagcgggtgcagttccctggaaagTct  
15 ctctataaccaggaggagttcgtgcgttcgacagcgacgtgggggagttaccgggcggtagcggagctaggcgg  
ccgtcgtccgagttcctggaacagccagaaggacatccctggaggacaggcggggccaggtagcaccgtgtgcagac  
acaactacgggttggtag (SEQ ID NO: 9 3) ;

DRB1\*0704 :

tttccctgtggcagggttaagataaagtgatcttcaacgggacggagcgggtgcagttccctggaaagactcttc  
20 tataaccaggaggagttcgtgcgttcgacagcgacgtgggggagttaccgggcggtagcggagctAgggcggccgt  
tcgtccgagttcctggaacagccagaaggacatccctggaggacaggcggggccaggtagcacaTtactgcagacaca  
ctacgggttggtagagc (SEQ ID NO: 9 4) ;

DRB1\*0705 :

cacgttccctgtggcagggttaagataaagtgatcttcaacgggacggagcgggtgcagttccctggaaagact  
25 ctctataaccaggaggagttcgtgcgttcgacagcgacgtgggggagttaccgggcggtagcggagctaggcgg  
ccgtcgtccgagttcctggaacagccGgaaggacatccctggaggacaggcggggccaggtagcaccgtgtgcagac  
acaactacgggttggtagagcttcacag (SEQ ID NO: 9 5) ;

DRB1\*0706 :

cacgtttcctgtggcagggtaagtataagtgctatttcttcaacgggacggagcgggtgcagttcctggaaagact  
cttctataaccaggaggagttcgtgcgttcgacagcgacgtgggggagtagcgggcggtagcggagctAgggcgg  
ccgtcgtcGgagtagtggaaacagccagaaggacatccctggaggacaggcggggccaggtaggacaccgtGtgcagac  
5 acaactacggggtlggtagagcttcacagtgacggcgag (SEQ ID NO: 96) ;

DRB1\*0707 :

cacgtttcctgtggcagggtaagtataagtgctatttcttcaacgggacggagcgggtgcagttcctggaaagact  
cttctataaccaggaggagttcgtgcgttcgacagcgacgtgggggagtagcgggcggtagcggagctagggTgg  
ccgtcgtcGgagtagtggaaacagccagaaggacatccctggaggacaggcggggccaggtaggacaccgtgtgcagac  
10 acaactacggggtlggtagagcttcacagt (SEQ ID NO: 97) ;

DRB1\*080101 :

ggggacacccgaccacgtttcttggagtagtctacgggtgagtgTatttcttcaatgggacggagcgggtgcggt  
tcttggacagatacttctataaccaagaggagtagtgcgttcgacagcgacgtgggggagtagcgggcggtagc  
ggagctggggcgccctagGccgagtagtggaaacagccagaaggacTtcttggaaacagggcggggccTggtaggac  
15 acctactgcagacacaactacggggtlggtagagcttcacGgtgcagcgcgag (SEQ ID NO: 98) ;

DRB1\*080102 :

cacgtttcttggagtagtctacgggtgagtgTatttcttcaatgggacggagcgggtgcggttcttggacagata  
Ttctataaccaagaggagtagtgcgttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
cctagcggcgagtagtggaaacagccagaaggacttcttggaaacagggcggggccctggtaggacacctactgcagac  
20 acaactacggggtlggtagagcttcacggtagcagcgcgag (SEQ ID NO: 99) ;

DRB1\*080201 :

atgggtgtctgaggctccctggaggctccctgcatggcagTcttgacagtgacactgatgggtgtgagctccccac  
tggcttggctggggacaccagaccacgtttcttggagtagtctacgggtgagtgTatttcttcaatgggacgga  
gcgggtgcggttcttggacagatacttctataaccaagaggagtagtgcgttcgacagcgacgtgggggagtagc  
25 cgggcggtagcggagctggggcgccctgtagccgagtagtggaaacagccagaaggacttcttggaaacagggcggg  
ccctggtaggacacctactgcagacacaactacggggtlggtagagcttcacGgtgcagcgcgag (SEQ ID  
NO: 100) ;

DRB1\*080202 :

cacgtttcttggagtlactctacgggtgagtgTatttcttcaatgggacggagcgggtgcggttccitggacagata  
cttctataaccaagaggagTAcgtgcgcttcgacagcgacgtgggggagTaccgggcggtgacggagctggggcgg  
ccTgatgccgagTacttggaacagccagaaggacTtccitggaagacaggcggggcccTggtggacacctactgcagac  
5 acaactacggggttggtagagcttcacagTgcagcggcgag (SEQ ID NO: 1 0 1) ;

DRB1\*080203 :

cgtttcttggagtlactctacgggtgagtgTatttcttcaatgggacggagcgggtgcggttccitggacagatact  
tctataaccaagaggagTAcgtgcgcttcgacagcgacgtgggggagTaccgggcggtgacAgagctggggcggcc  
tgatgccgagTacttggaacagccagaaggacTtccitggaagacaggcggggcccTggtggacacctactgcagacac  
10 aactacggggttggtagagcttcacggTg (SEQ ID NO: 1 0 2) ;

DRB1\*080302 :

ggggacaccagaccacgtttcttggagtlactctacgggtgagtgTatttcttcaatgggacggagcgggtgcggt  
tccitggacagatacttctataaccaagaggagTAcgtgcgcttcgacagcgacgtgggggagTaccgggcggtgac  
ggagctggggcggccTgCgccgagTacttggaacagccagaaggacTtccitggaagacaggcggggcccTggtggac  
15 acctactgcagacacaaTaccggggttggtagagcttcacagTgcagcggcgag (SEQ ID NO: 1 0 3) ;

DRB1\*080401 :

ggggacaccagaccacgtttcttggagtlactctacgggtgagtgTatttcttcaatgggacggagcgggtgcggt  
tccitggacagatacttctataaccaagaggagTAcgtgcgcttcgacagcgacgtgggggagTaccgggcggtgac  
ggagctggggcggccTgatgccgagTacttggaacagccagaaggacTtccitggaagacaggcggggcccTggtggac  
20 acctactgcagacacaaTaccggggttGtagagcttcacagTgcagcggcgag (SEQ ID NO: 1 0 4) ;

DRB1\*080402 :

ttcaatgggacggagcgggtgcggttccitggacagatacttctataaccaagaggagTAcgtgcgcttcgacagcg  
acgtgggggagTaccgggcggtgacggagctggggcggccTgatgccgagTacttggaacagccagaaggacTtccit  
ggaagacaggcggggcccTggtggacacctactgcagacacaaTaccggggttGtagagcttcacagTgcagcgg  
25 (SEQ ID NO: 1 0 5) ;

DRB1\*080403 :

cacgtttcttggagtlactctacgggtgagtgTatttcttcaatgggacggagcgggtgcggttccitggacagata

cttctataaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcggcggtgacggagctggggcgg  
ccitgaigccgagtagtggacagccagaaggacttccitggaagacaggcggggcccTggtggacacctactgcagac  
acaactacggggttgTtgagagcttcacGgtgcagcggcgag (SEQ ID NO: 106) ;

DRB1\*080404 :

5 cactttcttggagtagtctacgggtgagtgtaattcttcaatgggacggagcgggtgcggttccitggacagata  
cttctataaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcggcggtgacggagctggggcgg  
ccitgaigccgagtagtggacagccagaaggacttccitggaagacaggcggggcccTggtggacacctactgcagac  
acaactacggggttgTtgagagcttcacGgtgcagcggcgag (SEQ ID NO: 107) ;

DRB1\*0805 :

10 cactttcttggagtagtctacgggtgagtgtaattcttcaatgggacggagcgggtgcggttccitggacagata  
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ccitgaigccgagtagtggacagccagaaggacttccitggaagaCaggcggggcccggtggacacctactgcagac  
acaactacggggttggt (SEQ ID NO: 108) ;

DRB1\*0806 :

15 ccactttcttggagtagtctacgggtgagtgtaattcttcaatgggacggagcgggtgcggttccitggacagata  
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gcctgaigccgagtagtggacagccagaaggacttccitggaagacaggcggggcccTggtggacacctactgcaga  
cacaactacggggttgTtgagagcttcacagtagcagcggcgag (SEQ ID NO: 109) ;

DRB1\*0807 :

20 cactttcttggagtagtctacgggtgagtgtaattcttcaatgggacggagcgggtgcggttccitggacagata  
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ccitgtgcccagtagtggacagccagaaggacttccitggaagacaggcggggcccTggtggacacctactgcagac  
acaactacggggttgTtgagagcttcacGgtgcagcggcgag (SEQ ID NO: 110) ;

DRB1\*0808 :

25 ttggagtagtctacgggtgagtgtaattcttcaatgggacggagcgggtgcggttccitggacagatacttctata  
accaagaggagtagtgcgcttcgacagcgacgtgggggagtagcggcggtgacggagctggggcggccitGtgc  
ggagCactggacagccagaaggacttccitggaagacaggcggggcccTggtggacacctactgcagacacaactac

gggggtggtag (SEQ ID NO: 1 1 1) ;

DRB1\*0809 :

cacgtttcttggagtactctacgggtgagtggtatttcttcaatgggacggagcgggtgcggttccctggacagata  
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5 cctgatgccgagtagtggaaacagccagaaggacTtccctggaagacaggcggggcccTggtggacacctactgcagac  
acaactacgggggtggtagagcttcacGgtgcagcggcgag (SEQ ID NO: 1 1 2) ;

DRB1\*0810 :

cacgtttcttggagtactctacgggtgagtggtatttcttcaatgggacggagcgggtgcggttccctggacagata  
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10 cctacgcccgagtagtggaaacagccagaaggacAtcctggaagacaggcggggcccTggtggacacctactgcagac  
acaactacgggggtgtGtagagcttcacagtagcagcggcgag (SEQ ID NO: 1 1 3) ;

DRB1\*0811 :

cacgtttcttggagtactctacgggtgagtggtatttcttcaatgggacggagcgggtgcggttccctggacagata  
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15 cctgCtgccgagtagtggaaacagccagaaggacTtccctggaagacaggcggggcccTggtggacacctactgcagac  
acaactacgggggtggtagagcttcacGgtg (SEQ ID NO: 1 1 4) ;

DRB1\*0812 :

cacgtttcttggagtactctacgggtgagtggtatttcttcaatgggacggagcgggtgcggttccctggacagata  
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20 cctagcgccgagtagtggaaacagccagaaggacAtcctggaagacaggcggggcccTggtggacacctactgcagac  
acaactacggggCtggtagagcttcacagtagcagcggcgag (SEQ ID NO: 1 1 5) ;

DRB1\*0813 :

ttctggagtactctacgggtgagtggtatttcttcaatgggacggagcgggtgcggttccctggacagatacttcta  
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25 gccgagtagtggaaacagccagaaggaccttccctggaagacaggcggggcccTggtggacacctactgcagacacaact  
acgggggtggtagagcttcacGgtg (SEQ ID NO: 1 1 6) ;

DRB1\*0814 :

cacgtttcttggagtactcttaGgggtgagtgltatttcttcaatgggacggagcgggtgcggttccitggacagata  
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acaactacggggttggtagagcttcacagtg(SEQ ID NO: 117) ;

5 DRB1\*0815 :

tttcttggagtactctacgggtgagtgltatttcttcaatgggacggagcgggtgcggttccitggacagatacttc  
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atgcggagCacttgaacagccagaaggacAtccttgaagacaggcggggccctTggtggacacctactgcagacaaa  
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10 DRB1\*0816 :

cacgtttcttggagtactctacgggtgagtgltatttcttcaatgggacggagcgggtgcggttccitggacagata  
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cctagcgccgagtagtggacagccagaaggacAtccttgaagacaggcggggccctgggtggacacctactgcagac  
acaactacggggttggtagagcttcacGgtgcagcggcgag(SEQ ID NO: 119) ;

15 DRB1\*0817 :

cacgtttcttggagtactctacgggtgagtgltatttcttcaatgggacggagcgggtgcggttccitggacagata  
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cctagcgccgagtagtggacagccagaaggacTtcccttgaagacaggcggggccctTggtggacacctactgcagac  
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20 DRB1\*0818 :

cacgtttcttggagtactcttaCgggtgagtgltatttcttcaatgggacggagcgggtgcggttccitggacagata  
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cctagcgccgagtagtggacagccagaaggacAtccttgaagaCaggcggggccgcggtggacacctactgcagac  
acaactacggggttggtagagcttcacagtgacggcgag(SEQ ID NO: 121) ;

25 DRB1\*0819 :

tttcttggagtactctacgggtgagtgltatttcttcaatgggacggagcgggtgcggttccitggacagatacttc  
tataaccaagaggagtagtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcggccctt

TcgccgagtlactggaacagccagaaggacAiccgggaagacaggcgggcccTgggggacacclactgcagacacaa  
ctacgggggtgggtagagcttcacagtc (SEQ ID NO: 1 2 2) ;

DRBI#0820 :

cacgtttctggagtlactctacgtCtgagtgctatttcttcaatgggacggagcgggtgcggttccggacagata  
5 cttctataaccaagaggagTcgtgcgttcgacagcgacgtgggggagTaccgggcggtagcgagctggggcgg  
cctgatgccgagtlactggaacagccagaaggacTtccgggaagacaggcgggcccTgggggacacclactgcagac  
acaactacgggggtgtGgagagcttcacagtcagcggcga (SEQ ID NO: 1 2 3) ;

DRBI#0821 :

cacgtttctggagtlactctatgggtgagtgatttcttcaatgggacggagcgggtgcggttccggacagata  
10 cttccataaccaggaggagTcgtgcgttcgacagcgacgtgggggagTaccgggcggtagcgagctggggcgg  
cctgatgccgagtlactggaacagccagaaggacttccgggaagacaggcgggcccTgggggacacclactgcagac  
acaactacgggggtgggtagagcttcagggtcagcggcga (SEQ ID NO: 1 2 4) ;

DRBI#0822 :

cacgtttctggagtlactctacgggtgagtgatttcttcaatgggacggagcgggtgcggttccggacagata  
15 cttctataaccaagaggagTcgtgcgttcgacagcgacgtgggggagTaccgggcggtagcgagctggggcgg  
cctagcgccgagtlactggaacagccagaaggacttccgggaagacaggcgggcccTgggggacacclactgcagac  
acaactacggggCtgtGgagagcttcacGgtgcagcggcgag (SEQ ID NO: 1 2 5) ;

DRBI#0823 :

cacgtttctggagtlactctacgggtgagtgatttcttcaatgggacggagcgggtgcggttccggacagata  
20 cttctataaccaagaggagTcgtgcgttcgacagcgacgtAgggagTaccgggcggtagcgagctggggcgg  
cctagcgccgagtlactggaacagccagaaggacatccgggaagacaggcgggcccTgggggacacclactgcagac  
acaactacgggggtgggtagagcttcacagtcagcggcgag (SEQ ID NO: 1 2 6) ;

DRBI#0824 :

cacgtttctggagtlactctacgggtgagtgatttcttcaatgggacggagcgggtgcggttccggacagata  
25 cttctataaccaagaggagTcgtgcgttcgacagcgacgtgggggagTaccgggcggtagcgagctggggcgg  
cctgatgccgagtlactggaacagccagaaggacTtccgggaagacaggcgggcccTgggggacacclactgcagac  
acaactacgggggtgggtagagcttcacagtcagcgg (SEQ ID NO: 1 2 7) ;



DRBI\*090102 :

ggggacaccaaccacgtttcttgaagcaggataagtttgagtgtcatttcttcaacgggacggagcgggtgcggt  
atctgcacagaggcatctataaccaagaggagaacgtgcgttcgacagcgacgtgggggagtagcgggcggtagc  
ggagctggggcggccgtgcgcgagtcctggaacagccagaaggacttccaggagcggaggcggccgaggtggac  
5 accgtgtgcagacacaactacggggtggtagagcttcacagtgcagAggcgag (SEQ ID NO: 1 2 8) ;

DRBI\*0902 :

cacgtttcttgaagcaggataagtttgagtgtcatttcttcaacgggacggagcgggtgcggtatctgcacagagg  
catctataaccaagaggagaacgtgcgttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
cctgacgcTgagtagtggaaacagccagaaggacttccaggagcggaggcggccgaggtggacaccgtgtgcagac  
10 acaactacggggtggtagagcttcacagtgcagAggcgag (SEQ ID NO: 1 2 9) ;

DRBI\*100101 :

atgggtgtgtctgaggctccctggaggctcctgcatggcagttctgacagtgacactgatgggtgtgagctccccac  
tggctttggctggggacaccagaccacgtttcttggaggaggttaagtttgagtgtcatttcttcaacgggacgga  
gcgggtgcggttgcctggaaagacgcgtccataaccaagaggagtagcgcgctacgacagcgacgtgggggagtagc  
15 cgggcggtagcggagctggggcggccgtgatgccgagtagtggaaacagccagaaggaccttccaggagcggaggcgTg  
ccgcggtagcaccttctgcagacacaactacggggtggtagagcttcacagtgcagcggcgag (SEQ ID  
NO: 1 3 0) ;

DRBI\*100102 :

cacgtttcttggaggaggttaagtttgagtgtcatttcttcaacgggacggagcgggtgcggttgcctggaaagacg  
20 cGtccataaccaagaggagtagcgcgctacgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
ccgtgatgccgagtagtggaaacagccagaaggaccttccaggagcggaggcgGccgcggtagcaccttctgcagac  
acaactacggggtggtagagcttcacagtgcagcggcgag (SEQ ID NO: 1 3 1) ;

DRBI\*110101 :

atgggtgtgtctgaggctccctggaggctcctgcatggcagTtctgacagtgacactgatgggtgtgagctccccac  
25 tggctttggctggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacgga  
gcgggtgcggttccaggacagatctctataaccaagaggagtagtgcgttcgacagcgacgtgggggagttc  
cgggcggtagcggagctggggcggccgtgatgaGgagtagtggaaacagccagaaggacTtccaggaaGaggcggg

ccgcggtagacacctactgcagacacaactacggggtagtgagagcttcacagtcagcggcgag (SEQ ID NO: 1 3 2) ;

DRB1\*110102 :

ggggacaccagaccacgtttcttggagtagctacgctcagtgtagtcttcttcaatgggacggagcgggtgcggt  
5 tccggacagatacttctataaccaagaggagtagctgcgcttcgacagcgacgtgggggagttccgggcggtagc  
ggagctggggcggcctgatgaGgagtagtggaacagccagaaggacTtccgggaagaCaggcgggcccggtaggac  
acctactgcagacacaactacggggtagtgagagcttcacGgtgcagcggcgag (SEQ ID NO: 1 3 3) ;

DRB1\*110103 :

cacgtttcttggagtagctacgctcagtgtagtcttcttcaatgggacggagcgggtgcggttccggacagata  
10 ctctataaccaagaggagtagctgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcgg  
ccgatgaGgagtagtggaacagccagaaggacTtccgggaagaCaggcggcggtaggacacctactgcagac  
acaactacggggtagtgagagcttcacagtcagcggcgag (SEQ ID NO: 1 3 4) ;

DRB1\*110104 :

cgtttcttggagtagctacgctcagtgtagtcttcttcaatgggacggagcgggtgcggttccggacagatact  
15 tctataaccaagaggagtagctgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggcc  
tgatgAggagtagtggaacagccagaaggacTtccgggaagaCaggcgggcccggtaggacacctactgcagacac  
aactacggggtagtgagagcttcacagtcagcggcgag (SEQ ID NO: 1 3 5) ;

DRB1\*1102 :

ggggacaccagaccacgtttcttggagtagctacgctcagtgtagtcttcttcaatgggacggagcgggtgcggt  
20 tccggacagatacttctataaccaagaggagtagctgcgcttcgacagcgacgtgggggagttccgggcggtagc  
ggagctggggcggcctgatgAggagtagtggaacagccagaaggacA tccgggaagacGAgcgggcccggtaggac  
acctactgcagacacaactacggggtagtgagagcttcacagtcagcggcgag (SEQ ID NO: 1 3 6) ;

DRB1\*1103 :

atggtagtgtaggctcccggaggctccctgcatggcagTctgcagtagacacgatggtagtagtccccac  
25 tggcttggctggggacaccagaccacgtttcttggagtagctacgctcagtgtagtcttcttcaatgggacgga  
gcgggtgcggttccggacagatacttctataaccaagaggagtagctgcgcttcgacagcgacgtgggggagttc  
cgggcggtagcggagctggggcggcctgatgaggagtagtggaacagccagaaggacTtccgggaagacGAgcggg

ccgcggtagacacclactgcagacacaactacggggtgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 137) ;

DRB1\*110401 :

atggtgtgtctgaggctccctggaggctcctgcaaggcagTctgcagtgacac tgaagggtgagctcccccac  
5 tggctttggctggggacaccagaccacgtttcttggagtlactctacgtctgagtgatcttcttcaatgggacgga  
ggcgggtgcgggttccctggacagatacttctataaccaagaggagtlacgtgcgcttcgacagcgacgtgggggagttc  
cgggcggtagcggagctggggcgccctgatgaggagtlacggaacagccagaaggacTtccctggaagaCaggcggg  
ccgcggtagacacclactgcagacacaactacggggtgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 138) ;

10 DRB1\*110402 :

ggggacaccagaccacgtttcttggagtlactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggt  
tccctggacagatacttctataaccaagaggagtlacgtgcgcttcgacagcgacgtgggggagttccgggcggtagc  
ggagctggggcgccctgatgaGgagtlacggaacagccagaaggacTtccctggaagacaggcggcccggtggac  
acctactgcagacacaactacggggtgtGgagagcttcacGgtgcagcggcgag (SEQ ID NO: 139) ;

15 DRB1\*1105 :

ccacgtttcttggagtlactctacgGgtgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagat  
acttctataaccaagaggagtlacgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcgcc  
gacctgatGAggagtlacggaacagccagaaggacTtccctggaagaCaggcgggcccggtagacacctactgcaga  
cacaactacggggtggtagagcttcacagtcagcggcga (SEQ ID NO: 140) ;

20 DRB1\*110601 :

cgtttcttggagtlactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagatact  
tctataaccaagaggagtlacgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcgcc  
tgatgaGgagtlacggaacagccagaaggacTtccctggaagaCaggcgggcccggtagacacctactgcagacac  
aactacggggCtgggagagcttcacagtcagcggcgag (SEQ ID NO: 141) ;

25 DRB1\*110602 :

tttcttggagtlactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagatactt  
tataaccaagaggagtlacgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcgccctg

atgaGgagtlactggaacagccagaaggacTtccTggaagaCaggcgggccggtggacacctatTgcagacacaa  
ctacggggCtgtggagagcttcacagtcagcggcgag (SEQ ID NO: 1 4 2) ;

DRB1\*1107 :

ttggagtlacttactgtctgagtgicatttcttcaatgggacggagcgggtgcggttccTggacagatacttctata  
5 accaagaggagtlactgtcgcttcgacagcgacgtgggggagTccgggcggTgacggagctggggcggccTgatGA  
GgagtlactggaacagccagaaggaccttccTggagcagaagcggggccGgTggacaActactgcagacacaactac  
ggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 1 4 3) ;

DRB1\*110801 :

gtctgagtgicatttcttcaatgggacggagcgggtgcggttccTggacagatacttctataaccaagaggagtAc  
10 gtgcgcttcgacagcgacgtgggggagTccgggcggTgacggagctggggcggccTgatGAggagtlactggaaca  
gccagaaggaccttccTggaagaCaggcgggccggtggacacctactgcagacacaactacggggTggTgagag  
cttcacagtg (SEQ ID NO: 1 4 4) ;

DRB1\*110802 :

gtctgagtgicatttcttcaatgggacggagcgggtgcggttccTggacagatacttctataaccaagaggagtac  
15 gtgcgcttcgacagcgacgtgggggagTccgggcggTgacggagctggggcggccTgatGAgagtlactggaaca  
gccagaaggaccttccTggaagaCaggcgggccggtggacacctactgcagacacaactacggggTggTgagag  
cttcacGgtg (SEQ ID NO: 1 4 5) ;

DRB1\*1109 :

catttcttcaatgggacggagcgggtgcggttccTggacagatacttccataaccaGaggagAACgtgcgcttcg  
20 acagcgacgtgggggagTccgggcggTgacggagctggggcggccTgatGAggagtlactggaacagccagaagga  
cTtccTggaagaCaggcgggccggtggacacctactgcagacacaactacggggTggTgagagcttcacagtg  
cag (SEQ ID NO: 1 4 6) ;

DRB1\*1110 :

gagtgicatttcttcaatgggacggagcgggtgcggttccTggacagatacttccataaccaGaggagTcgtgc  
25 gcttcgacagcgacgtgggggagTccgggcggTgacggagctggggcggccTgatGAggagtlactggaacagcca  
gaaggacTtccTggaagaCaggcgggccggtggacacctactgcagacacaactacggggTggT (SEQ ID  
NO: 1 4 7) ;

DRB1\*1111 :

tttcttggagttacttctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttccitggacagatacttct  
tataaccaagaggagttacgtgcgtctcgacagcgacgtgggggagttccgggcgggtgacggagctggggcggcctg  
atgAggagttacttgaacagccagaaggacTtcttgaagacGAgcgggccggtggacacctactgcagacacaa  
5 ctacggggttggtagagcttcacagtcagcggcgag (SEQ ID NO: 148) ;

DRB1\*111201 :

gagtgatcttcttcaatgggacggagcgggtgcggttccitggacagatacttctataaccaagaggagttcgltgc  
gcttcgacagcgacgtgggggagttccgggcgggtgacggagctggggcggcctgatgAggagttacttgaacagcca  
gaaggacTtcttgaagaCaggcgggccggtggacacctactgcagacacaactacggggttgggt (SEQ ID  
10 NO: 149) ;

DRB1\*111202 :

cacgtttcttggagttacttctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttccitggacagata  
cttctataaccaGaggagttcgltgcgtctcgacagcgacgtgggggagttccgggcgggtgacggagctggggcgg  
ccigtatgAggagttacttgaacagccagaaggacTtcttgaagaCaggcgggccggtggacacctactgcagac  
15 acaactacggggttggtagagcttcacagtcagcggcgag (SEQ ID NO: 150) ;

DRB1\*1113 :

ggggacaccagaccacgtttcttggagttacttctacgtctgagtgatcttcttcaatgggacggagcgggtgcggt  
tccitggacagatacttccataaccaggaggagttcgltgcgtctcgacagcgacgtgggggagttccgggcgggtgac  
ggagctggggcggcctgatgAGgagttacttgaacagccagaaggaccttctggagcGaggcgggccggtggac  
20 acciaTtgcagacacaactacggggttggtagagcttcacagtcagcggcgag (SEQ ID NO: 151) ;

DRB1\*1114 :

ggggacaccagaccacgtttcttggagttacttctacgtctgagtgatcttcttcaatgggacggagcgggtgcggt  
tccitggacagatacttctataaccaagaggagttacgtgcgtctcgacagcgacgtgggggagttccgggcgggtgac  
ggagctggggcggcctgatgAggagttacttgaacagccagaaggacAtcttgaagacGAgcgggccggtggac  
25 acctactgcagacacaactacggggttggtagagcttcacagtcagcggcgag (SEQ ID NO: 152) ;

DRB1\*1115 :

ggggacaccagaccacgtttcttggagttacttctacgtctgagtgatcttcttcaatgggacggagcgggtgcggt

tcc tggacagatacttctataaccaagaggaggacTtgcgcttcgacàgcgacgtgggggagtlccgggcggtagc  
ggagctggggcgccctgatgaGgagtagtggacagccagaaggacTtcc tggaaGaCaggcgggccgctggac  
acctactgcagacacaactacggggtggtagagcttcacagtcagcggcgag (SEQ ID NO: 1 5 3) ;  
DRBI\*1116 :

5 cactttcttggagtactctacgtctgagtgctat tcttcaa tgggacggagcgggtgcggttcc tggacagata  
cttccataaccaggaggagAacgtgcgcttcgacagcgacgtgggggagtlccgggcggtagcggagctggggcg  
ccctgatgAggagtactggaacagccagaaggacAtcc tggaaagacGAgcgggcccgggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 1 5 4) ;  
DRBI\*1117 :

10 ggggacaccagaccacgttcttggagtactctacgtctgagtgctat tcttcaa tgggacggagcgggtgcggt  
tcc tggacagatacttccataaccaggaggagtcgtgcgcttcgacagcgacgtgggggagtagcgggcggtagc  
ggagctggggcgccctgatgAGgagtactggaacagccagaaggacctcc tggagcggagggcgccgAggtggac  
acctatTtgcagacacaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 1 5 5) ;  
DRBI\*1118 :

15 tttcttggagtactctacgtctgagtgctat tcttcaa tgggacggagcgggtgcggttcc tggacagatactt  
tataaccaagaggagtagtgcgcttcgacagcgacgtgggggagtlccgggcggtagcggagctggggcgccctg  
atgAggagtactggaacagccagaaggacAtcc tggaaagacGaggcgggcccgggtggacacctactgcagacaaa  
ctacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 1 5 6) ;  
DRBI\*1119 :

20 tttcttggagtactctacgtctgagtgctat tcttcaa tgggacggagcgggtgcggttcc tggacagatactt  
tataaccaagaggagtagtgcgcttcgacagcgacgtgggggagtlccgggcggtagcggagctggggcgccctg  
atgAggagtactggaacagccagaaggacAtcc tggaaagacGaggcgggcccgggtggacacctactgcagacaaa  
ctacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 1 5 7) ;  
DRBI\*1120 :

25 tggagtactctacgtctgagtgctat tcttcaa tgggacggagcgggtgcggttcc tggacagatacttccata  
accaggaggagAacgtgcgcttcgacagcgacgtgggggagtlccgggcggtagcggagctggggcgccctgatgA  
ggagtactggaacagccagaaggacAtcc tggaaagacGAgcgggcccgggtggacacctactgcagacacaactac

ggggttggtagagcttcacagtgcagc (SEQ ID NO: 1 5 8) ;

DRB1\*1121 :

ttggagtacctacgtctgagtgctatcttccaatgggacggagcgggtgcggttccaggacagatctctata  
accaagaggagtagctgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctga  
5 ggagtagtggaaacagccagaaggacatcttggaaagcAGcggggccggtggacacctactgcagacacaactac  
ggggctgtggaga (SEQ ID NO: 1 5 9) ;

DRB1\*1122 :

cacgtttcttggagcaggtaaaCatgagtgctatcttccaatgggacggagcgggtgcggttccaggacagata  
cttctataaccaagaggagtagctgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
10 ccctgaatgaGgagtagtggaaacagccagaaggacTtccctggaaagcAgggcgggcccgggtggacacctactgcagac  
acaactacggggttggtgagag (SEQ ID NO: 1 6 0) ;

DRB1\*1123 :

ccacgtttcttggagtagctacctacgtctgagtgctatcttccaatgggacggagcgggtgcggttccaggacagat  
acttctataaccaagaggagtagctgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
15 gccctgaatgaGgagtagtggaaacagccagaaggacTtccctggaaagcAgggcgggcccTggtggacacctactgcaga  
cacaactacggggttggtg (SEQ ID NO: 1 6 1) ;

DRB1\*1124 :

ttcttggagtagctacctacgtctgagtgctatcttccaatgggacggagcgggtgcggttccaggacagatacttct  
ataaccaagaggagGacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctga  
20 tgaGgagtagtggaaacagccagaaggacTtccctggaaGaCaggcgggcccgggtggacacctactgcagacacaac  
tacggggttggtgagagcttcac (SEQ ID NO: 1 6 2) ;

DRB1\*1125 :

cacgtttcttggagtagctacctacgtctgagtgctatcttccaatgggacggagcgggtgcggttccaggacagata  
cttctataaccaagaggagtagctgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
25 ccctgaatgaGgagtagtggaaacagccagaaggacTtccctggaaagcAgggcgggcccTggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtgcagcggcgag (SEQ ID NO: 1 6 3) ;

DRB1\*1126 :

tiggagtlacttactgtCtgaGtgcatttcttcaatgggacggagcgggtgcggttccitggacagatcttclata  
accaagaggagtlAcgtgcgttcgacagcgacgtgggggagltccgggcgggtgacggagctggggcggccigtatga  
ggagtlactlgaacagccagaaggacctccitggagcagaggcgggcccgggtggacacctactgcagacacaactlac  
ggggttggtag(SAQ ID NO: 1 6 4) ;

5 DRB1\*112701 :

tttcttggagtlacttactgtctgagtgctatttcttcaatgggacggagcgggtgcggttccitggacagatcttcl  
lataaccaagaggagtlacgtgcgttcgacagcgacgtgggggagltccgggcgggtgacggagctggggcggccigt  
atgaggagtlactlgaacagccagaaggacctccitggaAgaCaggcgggcccgggtggacaaTtactgcagacacaa  
ctacggggttggtagag(SAQ ID NO: 1 6 5) ;

10 DRB1\*112702 :

cacgtttcttggagtlacttactgtctgagtgctatttcttcaatgggacggagcgggtgcggttccitggacagata  
cttclataaccaagaggagtlacgtgcgttcgacagcgacgtgggggagltccgggcgggtgacggagctggggcgg  
ccigtatAggagtlactlgaacagccagaaggacctccitggaagaCaggcgggcccgggtggacaaTtactgcagac  
acaactacggggttggtagagcttcacagtcagcggcgag(SAQ ID NO: 1 6 6) ;

15 DRB1\*1128 :

cacgtttcttggagtlacttactgtctgaGtgcatttcttcaatgggacggagcgggtgcggttccitggacagata  
cttclataaccaagaggagAACgtgcgttcgacagcgacgtgggggagltccgggcgggtgacggagctggggcgg  
ccigtatAggagtlactlgaacagccagaaggacctccitggaagaCaggcgggcccgggtggacacctactgcagac  
acaactacggggttggtagagcttcacagtcagcggcgag(SAQ ID NO: 1 6 7) ;

20 DRB1\*1129 :

cacgtttcttggagtlacttactgtctgaGtgcatttcttcaatgggacggagcgggtgcggttccitggacagata  
cttclataaccaagaggagltccgtgcgttcgacagcgacgtgggggagltccgggcgggtgacggagctggggcgg  
ccigtatAggagtlactlgaacagccagaaggacctccitggaagaCaggcgggcccgggtggacacctactgcagac  
acaactacggggttggtagagcttcacagtcagcggcgag(SAQ ID NO: 1 6 8) ;

25 DRB1\*1130 :

cacgtttcttggagcTgcttaagtcgagtgctatttcttcaatgggacggagcgggtgcggttccitggacagata  
cttclataaccaagaggagtlacgtgcgttcgacagcgacgtgggggagltccgggcgggtgacggagctggggcgg



ccctgatgaggaglacctggaacagccagaaggacttccctggaagaCaggcgggccgcggtggacacctactgcagac  
acaactacggggttggtagagcttcacagtcagcggcga (SEQ ID NO: 169) ;

DRB1\*1131 :

ggggacaccagaccacgtttcttggagtlacttactgtctgagtgctatcttcttcaatgggacggagcgggtgcggt  
5 tcttggacagatacttctataaccaagaggaglacgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagc  
ggagctggggcggcctgatgAggagCactggaacagccagaaggacAtccctggaagaCaggcgggccgcggtggac  
acctactgcagacacaactacggggttggtagagcttcacagtcagcggcgag (SEQ ID NO: 170) ;

DRB1\*1132 :

cacgtttcttggagtlacttactgtctgagtgctatcttcttcaatgggacggagcgggtgcggttcttggacagata  
10 ctctataaccaagaggaglacgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcgg  
ccctgatgAGgagtlactggaacagccagaaggacttccctggaagaCaggcgggccgTggtagacacctactgcagac  
acaactacggggttggtagagcttcacagtcagcggcgag (SEQ ID NO: 171) ;

DRB1\*1133 :

ttggagtlacttactgtctgagtgctatcttcttcaatgggacggagcgggtgcggttcttggacagatacttctata  
15 accaagaggaglacgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggcctgatga  
ggaCtactggaacagccagaaggacttccctggaagacaggcgggccggtggacacctactgcagacacaactac  
ggggttggtagagcttcacagtcagcggc (SEQ ID NO: 172) ;

DRB1\*1134 :

cacgtttcttggagtlacttactgtctgagtgctatcttcttcaatgggacggagcgggtgcggttcttggacagata  
20 ctctataaccaagaggaglacgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcgg  
ccctgatgAggagtlactggaacagccagaaggacttccctggagcagaggcgggccggtggacacctactgcagac  
acaactacggggttcttggagagcttcacagtcagcggcga (SEQ ID NO: 173) ;

DRB1\*1135 :

ttggagtlacttactgtctgagtgctatcttcttcaatgggacggagcgggtgcggttcttggacagatacttctata  
25 accaagaggaglacgtgcgcttcgacagcgacgtgggggagttccgggcggtagcggagctggggcggcctgatga  
ggaCtactggaacagccagaaggacttccctggaagacaggcgggccggtggacacctactgcagacacaactac  
ggggttcttggagagcttcacagtcagcggc (SEQ ID NO: 174) ;

DRB1\*1136 :

cgtttcttggagttactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttcttggacagatact  
tctataaccaagaggagttacgttgcgtctcgacagcgacgtgggggagttccgggcgggtgacggagctggggcggc  
tgaatgaggagttacttggacagccagaaggacctcttggaaagacGAgcgggcccgggtggacacctactgcagacac  
5 aactacggggttgtGgagagcttcacagtgcagcggcgag (SEQ ID NO: 175) ;

DRB1\*1137 :

cacgtttcttggagttactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttcttggacagata  
cttctataaccaagaggagttacgttgcgtctcgacagcgacgtgggggagttccgggcgggtgacggagctggggcgg  
cctgatgaggagttacttggacagccagaaggacctcttggaaagacCaggcgggcccgggtggacacctactgcagac  
10 acaactacggggttgttggagagcttcacagtgcagcggcgag (SEQ ID NO: 176) ;

DRB1\*1138 :

cacgtttcttggagttactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttcttggacagata  
cttctataaccaagaggagttacgttgcgtctcgacagcgacgtgggggagttccgggcgggtgacggagctggggcgg  
cctgatgaggGgtacttggacagccagaaggacctcttggaaagacaggcgggcccgggtggacacctactgcagac  
15 acaactacggggttgttggagagcttcacagtgcagcggcgag (SEQ ID NO: 177) ;

DRB1\*1139 :

cacgtttcttggagttactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttcttggacagata  
cttctataaccaagaggagttacgttgcgtctcgacagcgacgtgggggagttccgggcgggtgagggagctggggcgg  
cctgatgaggagttacttggacagccagaaggacctcttggaaagacCaggcgggcccgggtggacacctactgcagac  
20 acaactacggggttgttggagagcttcacagtgcagcggcgag (SEQ ID NO: 178) ;

DRB1\*1140 :

cacgtttcttggagttactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttcttggacagata  
cttccataaccaggaggagAacgttgcgtctcgacagcgacgtgggggagttccgggcgggtgacggagctggggcgg  
cctgatgaggagttacttggacagccagaaggacctcttggaaagacGAgcgggcccgggtggacacctactgcagac  
25 acaactacggggttgtGg (SEQ ID NO: 179) ;

DRB1\*1141 :

tttcttggagttactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttcttggacagatacttc

tataaccaagaggaglacgtgcgttcgacagcgacgtgggggaglacgggaggacgggagcggggcgccctg  
atgAggagtlacgtgaacagccagaaggacTtccgtgaagacGAgcgggcccgggtggacacctactgcagacacaa  
ctacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 180) ;

DRB1\*1142 :

5 cactttcttggagtlacttactgtcgtgagtgatcttcttcaatgggacggagcgggtgcggttccgtggacagata  
cttctataaccaagaggaglacgtgcgttcgacagcgacgtgggggagTccgggaggacgggagcggggcg  
ccgtatgAggagtlacgtgaacagccagaaggacctccgtgaagaCaggcgggcccgggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 181) ;

DRB1\*1143 :

10 cactttcttggagtlacttactgtcgtgagtgatcttcttcaatgggacggagcgggtgcggttccgtggacagata  
cttctataaccaagaggaglacgtgcgttcgacagcgacgtgggggagTccgggaggacgggagcggggcg  
ccgtatgaggagtlacgtgaacagccagaaggacctccgtgaagaCaggcgggcccgggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 182) ;

DRB1\*120101 :

15 atgggtgtctgaggcctccgtggaggctccgtcatggcagTctgacagtgacactgatgggtgtgagcctccac  
tggctttggctggggacaccAgaccacgtttcttggagtlacttactgggtgagtgatcttcttcaatgggacgga  
gcgggtgcggttAcgtgagagacacttccataaccaggaggagCtccgtgcgttcgacagcgacgtgggggagttc  
cgggaggacggagcggggcgccctgtcgccgagTcgtgaacagccagaaggacAtcctggaagacaggcgcg  
ccgagggtggacacctatTgcagacacaactacggggCgtggagagcttcacagtcagcggcgag (SEQ ID

20 NO: 183) ;

DRB1\*120102 :

atgggtgtctgaggcctccgtggaggctccgtcatggcagTctgacagtgacactgatgggtgtgagcctccac  
tggctttggctggggacaccAgaccacgtttcttggagtlacttactgggtgagtgatcttcttcaatgggacgga  
gcgggtgcggttAcgtgagagacacttccataaccaggaggagCtccgtgcgttcgacagcgacgtgggggagttc  
25 cgggaggacggagcggggcgccctgtcgccgagTcgtgaacagccagaaggacAtcctggaagacaggcggg  
ccgagggtggacacctactgcagacacaactacggggCgtggagagcttcacagtcagcggcgag (SEQ ID  
NO: 184) ;

DRB1\*120201 :

cacgtttcttggagtacctacgggtgagtggtattttcttcaatgggacggagcgggtgcggttactggagagaca  
cttccataaccaggaggagCtccitgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
cctgtcggcgagtcctggaaacagccagaaggacTtccitggaagacaggcgcccgcggtggacacctatTgcagac  
5 acaactacggggCtgtggagagcttcacagtcagcggcgag (SEQ ID NO: 185) ;

DRB1\*120202 :

ttcttggagtacctacgggtgagtggtattttcttcaatgggacggagcgggtgcggttactggagagacacttcc  
ataaccaggaggagCtccitgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgt  
cgccgagtcctggaaacagccagaaggacTtccitggaagacaggcgCggcgcggtggacacctactgcagacacaac  
10 taccggggCtgtggag (SEQ ID NO: 186) ;

DRB1\*120302 :

cacgtttcttggagtacctacgggtgagtggtattttcttcaatgggacggagcgggtgcggttActggagagaca  
cttccataaccaggaggagCtccitgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
cctgtcggcgagtcctggaaacagccagaaggacAtcctggaagacaggcgCggcgcggtggacacctactgcagac  
15 acaactacggggCtgtggagagcttcacagtcagcgg (SEQ ID NO: 187) ;

DRB1\*1204 :

gagttacctacgggtgagtggtattttcttcaatgggacggagcgggtgcggttActggagagacacttccataacc  
aggaggagCtccitgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgaTgaGga  
glactggaacagccagaaggacAtcctggaagacaggcgcccgcggtggacacctatTgcagacacaactacggg  
20 gCtgtgg (SEQ ID NO: 188) ;

DRB1\*1205 :

cacgtttcttggagtacctacgggtgagtggtattttcttcaatgggacggagcgggtgcggttActggagagaca  
cttccataaccaggaggagttccitgcgttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
cctgtcggcgagtcctggaaacagccagaaggacAtcctggaagacaggcgcccgcggtggacacctatTgcagac  
25 acaactacggggCtgtggagagcttcacagtcagcggcgag (SEQ ID NO: 189) ;

DRB1\*1206 :

ggggacaccagaccacgtttcttggagtacctacgggtgagtggtattttcttcaatgggacggagcgggtgcggt

tActggagagacacitccataaaccaggaggagCtccitgcgcttcgacagcgacgtgggggagttccgggcggtgac  
ggagctggggcgccctgctgccgagtcctggaacagccagaaggacAtcctggaagacaggcgcccgcggtggac  
acctatTgcagacacaactacggggCtctggagagcttcacagtcagcgcgag (SEQ ID NO: 190) ;  
DRB1\*1207 :

5 cacgtttcttggagttactctacgggtgagtggtatttcttcaatgggacggagcgggtgcggttactggagagaca  
cttccataaaccaggaggagctccitgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
ccctgctgccgagtcctggaacagccagaaggacatcctggGagacaggcgcccgcggtggacacctatTgcagac  
acaactacggggCtctggagagcttcacagtcagcgcgag (SEQ ID NO: 191) ;  
DRB1\*1208 :

10 cacgtttcttggagttactctacgggtgagtggtatttcttcaatgggacggagcgggtgcggttCctggagagaca  
cttccataaaccaggaggagCtccitgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
ccctgctgccgagtcctggaacagccagaaggacAtcctggaagacaggcgcccgcggtggacacctatTgcagac  
acaactacggggCtctggagagcttcacagtcagcgcgag (SEQ ID NO: 192) ;  
DRB1\*130101 :

15 ggggacaccagaccacgtttcttggagttactctacgtctgagtgicatttcttcaatgggacggagcgggtgcggt  
tccctggaCagatacttccataaaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagttccgggcggtgac  
ggagctggggcgccctgctgccgagttcctggaacagccagaaggacAtcctggaagacAGcgggcggcggtggac  
acctactgcagacacaactacggggtgtGgagagcttcacagtcagcgcgag (SEQ ID NO: 193) ;  
DRB1\*130102 :

20 cacgtttcttggagttactctacgtctgagtgicatttcttcaatgggacggagcgggtgcggttccctggacagata  
cttccataaaccaggaggagaacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
ccctgatgccgagttcctggaacagccagaaggacatcctggaagacgagcgggcTgcgtggacacctactgcagac  
acaactacggggtgtggagagcttcacagtcagcgcgag (SEQ ID NO: 194) ;  
DRB1\*130103 :

25 cacgtttcttggagttactctacgtctgagtgicatttcttcaatgggacggagcgggtgcggttccctggacagata  
cttccataaaccaggaggagaacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
ccctgatgccgagttcctggaacagccagaaggacatcctggaagacAGcgggcggcggtggacacctatTgcagac

acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 195) ;

DRB1\*130201 :

ggggacaccagaccacgtttcttggaglacctacgtctgagtgcatcttctcaatgggacggagcgggtgcggt  
tcttggacagatacttcataaccaggaggagAACgtgcgcttcgacagcgacgtgggggagtTccgggcggtgac  
5 ggagctggggcggcctgagccgagctacgtgaacagccagaaggacAtcctggaagacAGcgggcccgggtggac  
acctactgcagacacaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 196) ;

DRB1\*130202 :

cacgtttcttggaglacctacgtctgagtgcatcttctcaatgggacggagcgggtgcggttcttggacagata  
cttcataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg  
10 cctgagccgagctacgtgaacagccagaaggacatcctggaagacAGcgCgcccgggtggacacctactgcagac  
acaactacggggttggtgagagcttcacagtcagcgg (SEQ ID NO: 197) ;

DRB1\*130301 :

ggggacaccagaccacgtttcttggaglacctacgtctgagtgcatcttctcaatgggacggagcgggtgcggt  
tcttggacagatacttctataaccaagaggagctacgtgcgcttcgacagcgacgtgggggagttaccgggcggtgac  
15 ggagctggggcggcctagCgcccagctacgtgaacagccagaaggacatcctggaagaCaAgcgggcccgggtggac  
acctactgcagacacaactacggggttggtgagagcttcacGgtgcagcggcgag (SEQ ID NO: 198) ;

DRB1\*130302 :

ttggagtlactacgtctgagtgcatcttctcaatgggacggagcgggtgcggttcttggacagatacttctata  
accaagaggagctacgtgcgcttcgacagcgacgtgggggagttaccgggcggtgacggagctggggcggcctacGgc  
20 cgagctacgtgaacagccagaaggacatcctggaagaCaAgcgggcccgggtggacacctactgcagacacaactac  
ggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 199) ;

DRB1\*1304 :

ggggacaccagaccacgtttcttggaglacctacgtctgagtgcatcttctcaatgggacggagcgggtgcggt  
tcttggacagatacttctataaccaagaggagctacgtgcgcttcgacagcgacgtgggggagtTccgggcggtgac  
25 ggagctggggcggcctacGgcccagctacgtgaacagccagaaggacatcctggaagacAGcgggcccgggtggac  
acctactgcagacacaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 200) ;

DRB1\*1305 :

cgtttcttggagtactctacgtctgaGtgctatttcttcaatgggacggagcgggtgcggttccctggacagatact  
tccataaccaGgaggagAacgtgcgcttcgacagcgacgtgggggagTccgggcggtagcggagctggggcggcc  
tgatgccgagtagtgaacagccagaaggacTtcttggaagaCaggcgggcccgggtggacacctactgcagacac  
aaactacggggttggtagagcttcacagtcagcggcgag (SEQ ID NO: 2 0 1) ;

## 5 DRB1\*1306 :

tgtcatttcttcaatgggacggagcgggtgcggttccctggaCagatacttccataaccaggaggagAacgtgcgct  
tcgacagcgacgtgggggagTccgggcggtagcggagctggggcggccctgatgccgagtagtgaacagccagaa  
ggacAtccttggaagaCaggcgggcccgggtggacacctactgcagacacaactacggggttggtagagcttcaca  
(SEQ ID NO: 2 0 2) ;

## 10 DRB1\*130701 :

cacgtttcttggagtactctacgtctgaGtgctatttcttcaatgggacggagcgggtgcggttccctggaCagata  
cttctataaccaagaggagTcgtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
ccctgatgccgagtagtgaacagccagaaggacTtcttggaGaCaggcgggcccgggtggacacctactgcagac  
acaactacggggttggtagagcttcacagtcagcggcgag (SEQ ID NO: 2 0 3) ;

## 15 DRB1\*130702 :

cacgtttcttggagtactctacgtctgaGtgctatttcttcaatgggacggagcgggtgcggttccctggaCagata  
cttctataaccaagaggagTcgtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
ccctgacgtgagtagtgaacagccagaaggacTtcttggaGaCaggcgggcccgggtggacacctactgcagac  
acaactacggggttggtagagcttcacagtcagcggcg (SEQ ID NO: 2 0 4) ;

## 20 DRB1\*1308 :

tcttggagtactctacgtctgagtgctatttcttcaatgggacggagcgggtgcggttccctggaCagatacttcc  
ataaccaggaggagTcgtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcggccctga  
tgccgagtagtgaacagccagaaggacAtccttggaagacGAgcgggcccgggtggacacctactgcagacacaac  
tacggggttggtagagcttcacagt (SEQ ID NO: 2 0 5) ;

## 25 DRB1\*1309 :

tcttggagtactctacgtctgagtgctatttcttcaatgggacggagcgggtgcggttccctggacagatacttcc  
cataaccaggaggagaAcgtgcgcttcgacagcgacgtgggggagTccgggcggtagcggagctggggcggccctg

atgccgagtlactlgaacagccagaaggacAtcctlggagcaggCgcgggccgcggtggacacctactgcagacacaa  
ctacggggttgtGgagagcttcacagtg (SEQ ID NO: 206) ;

DRBI\*1310 :

cacgtttctlggagtlactlactgtctgagtgctatltctlcaatgggacggagcgggtgcggttccctggaCagata  
5 ctltcataaaccaggaggagAacgtgcgcttcgacagcgacgtgggggagTccgggcgggtgacggagctggggcgg  
cctgatgccgagtlactlgaacagccagaaggacAtcctlggaagaCaAgcgggccgcggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtgacggcgag (SEQ ID NO: 207) ;

DRBI\*1311 :

cacgtttctlggagtlactlactgtctgagtgctatltctlcaatgggacggagcgggtgcggttccctggacagata  
10 ctltcataaaccaagaggagTactgtgcgcttcgacagcgacgtgggggagTccgggcgggtgacggagctggggcgg  
cctgatgccgagtlactlgaacagccagaaggacTtctlggaagaCaggcgggccgcggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtgacggcgag (SEQ ID NO: 208) ;

DRBI\*1312 :

cacgtttctlggagtlactlactgtctgagtgctatltctlcaatgggacggagcgggtgcggttccctggacagata  
15 ctltcataaaccaagaggagTactgtgcgcttcgacagcgacgtgggggagTaccgggcgggtgacggagctggggcgg  
ccttGcgccgagtlactlgaacagccagaaggacAtcctlggaagaCaggcgggccgcggtggacacctactgcagac  
acaactacggggttggtgagagcttcacagtgacggcgag (SEQ ID NO: 209) ;

DRBI\*1313 :

cacgtttctlggagtlactlactgtctgagtgctatltctlcaatgggacggagcgggtgcggttccctggacagata  
20 ctltcataaaccaagaggagTactgtgcgcttcgacagcgacgtgggggagTaccgggcgggtgacggagctggggcgg  
ccttGcgccgagtlactlgaacagccagaaggacAtcctlggaagacaggcggggccTggtggacacctactgcagac  
acaactacggggttggtgagagcttcacagtgca (SEQ ID NO: 210) ;

DRBI\*131401 :

tactgtctgagtgctatltctlcaatgggacggagcgggtgcggttccctggacagatactltcataaaccaagaggag  
25 TactgtgcgcttcgacagcgacgtgggggagTccgggcgggtgacggagctggggcggcctgatgccgagtlactlga  
acagccagaaggacTtctlggaGaCaggcgggccgcggtggacacctactgcagacacaactacggggttggtg  
(SEQ ID NO: 211) ;



DRBI\*131402 :

cacgtttcttggagtlacttactgtcgtgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagata  
cttctataaccaagaggagtlactgtcgttgcacagcgacgtgggggagTccgggcgggtgacggagctggggcgg  
cctgacgcTgagtlactggaacagccagaaggacTtccctggaaGaCaggcgggccggtggacacctactgcagac  
5 acaactacggggttgtgagagcttcacagtcagcggcgag (SEQ ID NO: 2 1 2) ;

DRBI\*1315 :

tttcttggagtlacttactgtcgtgagtgatcttcttcaatgggacggagcgggtgcggttccctggaGagatctt  
cataaccaggaggagaacgtgcgttgcacagcgacgtgggggagTccgggcgggtgacggagctggggcggcctg  
atgccgagtlactggaacagccagaaggacatccctggaagacGAgcgggccggtggacacctactgcagacacaa  
10 ctacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 2 1 3) ;

DRBI\*1316 :

ggagtlacttactgtcgtgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagatcttccataac  
caggaggagaacgtgcgttgcacagcgacgtgggggagTccgggcgggtgacggagctggggcggcctgatgccg  
agtlactggaacagccagaaggacatccctggaagacgagcgggccggtggacacctactgcagacacaaactacgg  
15 ggttgAtgagagcttcaca (SEQ ID NO: 2 1 4) ;

DRBI\*1317 :

ggggacaccagaccacgtttcttggagtlacttactgggtgagtgTatttcttcaatgggacggagcgggtgcggt  
tccctggacagatcttctataaccaagaggagtlactgtcgttgcacagcgacgtgggggagTccgggcgggtgac  
ggagctggggcggcctgatgccgagtlactggaacagccagaaggacatccctggaagacGAgcgggccggtggac  
20 acctactgcagacacaaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 2 1 5) ;

DRBI\*1318 :

cacgtttcttggagtlacttactgtcgtgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagata  
cttccataaccaggaggagAacgtgcgttgcacagcgacgtgggggagTccgggcgggtgacggagctggggcgg  
cctgatgccgagtlactggaacagccagaaggacTtccctggaagacaggcgggccTggtggacacctactgcagac  
25 acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 2 1 6) ;

DRBI\*1319 :

ggggacaccagaccacgtttcttggagtlacttactgtcgtgagtgatcttcttcaatgggacggagcgggtgcggt

tccitggaGagatacttccataaccaggaggagTcgtgcgcttcgacagcgacgtgggggagtagcggcggtgac  
ggagctggggcgccctgaltgccgagtagtggaacagccagaaggacatccitggaagacGAgcgggcccgggtggac  
acctactgcagacacaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 217) ;  
DRBI\*1320 :

5 cactttcttggagtagcttacgtctgagtgcatttcttcaatgggacggagcgggtgcggttccitggaCagata  
cttccataaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagTccgggctgacggagctggggcgcc  
cctgaltgccgagtagtggaacagccagaaggacctccitggaagacGAgcgggcccgggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtcagcgg (SEQ ID NO: 218) ;  
DRBI\*1321 :

10 ggggacaccagaccagtttcttggagtagcttacgtctgagtgcatttcttcaatgggacggagcgggtgcggt  
tccitggacagatacttctataaccaagaggagtagctgcgcttcgacagcgacgtgggggagTccgggctgac  
ggagctggggcgccctagcggcagtagtggaacagccagaaggacTtccitggaagaCaggcgggcccgggtggac  
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DRBI\*1322 :

15 gaccagtttcttggagtagcttacgtctgagtgcatttcttcaatgggacggagcgggtgcggttccitggaCag  
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cgccctgaltgccgagtagtggaacagccagaaggacAtccitggaagacGAgcgggcccgggtggacacctactgca  
gacacaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 220) ;  
DRBI\*1323 :

20 cgtttcttggagtagcttacgtctgagtgcatttcttcaatgggacggagcgggtgcggttccitggacagatact  
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tgaltgccgagtagtggaacagccagaaggacatccitggaagacGAgcgggcccgggtggacacctactgcagacac  
aactacggggttgtGgagagcttcacGgtgcagcggc (SEQ ID NO: 221) ;  
DRBI\*1324 :

25 cgtttcttggagtagcttacgtctgagtgcatttcttcaatgggacggagcgggtgcggttccitggacagatact  
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tgaltgccgagtagtggaacagccagaaggacTtccitggaagacGAgcgggcccgggtggacacctactgcagacac

aactacggggttgtGgagagcttcacagtcagcggc (SEQ ID NO: 2 2 2) ;

DRB1\*1325 :

cacgtttcttggagtlactCtaCgtCtgaGtgtcatttcttcaatgggacggagcgggtgcggttccctggaCagata  
cttctataaccaagaggagtAcgtgcgttcgacagcgacgtgggggagtTccgggcggtagcggagctggggcgg  
5 cctgaigccgagtlactggaacagccagaaggacctccctggaagaCaggcgggccgcggtagcaccttactgcagac  
acaactacggggttggtgaga (SEQ ID NO: 2 2 3) ;

DRB1\*1326 :

cacgtttcttggagtlacttactgtctgagtgcatttcttcaatgggacggagcgggtgcggttccctggagagata  
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10 cctgacgtTgagtlactggaacagccagaaggacttccctggaGaCaggcgCgccgcggtagcaccttactgcagac  
acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 2 2 4) ;

DRB1\*1327 :

cacgtttcttggagtlacttactgtctgagtgcatttcttcaatgggacggagcgggtgcggtagctggacagata  
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15 cctgaigccgagtlactggaacagccagaaggacatccctggaagacGAgcgggccgcggtagcaccttactgcagac  
acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 2 2 5) ;

DRB1\*1328 :

tggagtlacttactgtctgagtgcatttcttcaatgggacggagcgggtgcggttccctggacagatacttccata  
accaggaggagaacgtgcgttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcggcctgaigc  
20 cgagtlactggaacagccagaaggacatccctggaagacgagcgggccgcggtagcaccttactgcagacacaactac  
Cgggttgtggagagcttcac (SEQ ID NO: 2 2 6) ;

DRB1\*1329 :

cacgtttcttggagtlacttactgtctgagtgcatttcttcaatgggacggagcgggtgcggttccctggaCagata  
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25 cctgaigccgagtlactggaacagccagaaggacctccctggaagacGAgcgggccgcggtagcaccttactgcagac  
acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 2 2 7) ;

DRB1\*1330 :

tttcttggagtlactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagatacttct  
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GcgccgagtlacttgaacagccagaaggacAtccctggaagaCaggcgggcccgggtggacacctactgcagacacaa  
ctacggggttggtagagcttcaca (SEQ ID NO: 2 2 8) ;

## 5 DRB1\*1331 :

cacgtttcttggagtlactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagata  
cttccataaccaggaggagaacgtgcgtctgacagcgacgtgggggagttccgggcgggtgacggagctggggcgg  
ccctGcgccgagtlacttgaacagccagaaggacAtccctggaagacGAgcgggcccgggtggacacctactgcagac  
acaactacggggttggtagagcttcacagtcagcggcgag (SEQ ID NO: 2 2 9) ;

## 10 DRB1\*1332 :

cacgtttcttggagtlactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagata  
cttccataaccaggaggagAacgtgcgtctgacagcgacgtgggggagttccgggcgggtgacggagctggggcgg  
ccctGcgccgagtlacttgaacagccagaaggacAtccctggaagacGAgcgggcccgggtggacacctactgcagac  
acaactacggggttggtagagcttcacagtcagcggcgag (SEQ ID NO: 2 3 0) ;

## 15 DRB1\*1333 :

cacgtttcttggagtlactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagata  
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ccctGcgccgagtlacttgaacagccagaaggacAtccctggaagaCaagcgggcccgggtggacaActactgcagac  
acaactacggggttggtag (SEQ ID NO: 2 3 1) ;

## 20 DRB1\*1334 :

cacgtttcttggagtlactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagata  
cttccataaccaggaggagaacCtgcgtctgacagcgacgtgggggagttccgggcgggtgacggagctggggcgg  
ccctgagtcgagtlacttgaacagccagaaggacAtccctggaagacGAgcgggcccgggtggacacctactgcagac  
acaactacggggttggtagagcttcacagtcagcggcgag (SEQ ID NO: 2 3 2) ;

## 25 DRB1\*1335 :

cacgtttcttggagtlactctacgtctgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagata  
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cctgatgccgagtlac tggacagccagaaggacatcc tggagacgagcgggccggtggacacctactgcagac  
acaactacggggtlgtggagagcttcacagtcagcgg (SEQ ID NO: 2 3 3) ;

DRB1\*1336 :

cacgtttctlggagtlactacgtctgagtgatcttcttcaatgggacggagcgggtgcggtlcc tggacagata  
5 cttccataaccaggaggagAACgtgcgttcgacagcgacgtgggggagtlaccgggcggtagcggagctggggcgg  
cctgatgccgagtlac tggacagccagaaggacAtcc tggagacGAgcgggccggtggacacctactgcagac  
acaactacggggtlgtgagagcttcacagtcagcggcgag (SEQ ID NO: 2 3 4) ;

DRB1\*1337 :

cacgtttctlggagtlactacgtctgagtgatcttcttcaatgggacggagcgggtgcggtlcc tggacagata  
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cctgatgccgagtlac tggacagccagaaggacatcc tggagacCaAgcgggccggtggacacctactgcagac  
acaactacggggtlgtgagagcttcacGgtgcagcggcga (SEQ ID NO: 2 3 5) ;

DRB1\*1338 :

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acaactacggggtlgtt (SEQ ID NO: 2 3 6) ;

DRB1\*1339 :

cacgtttctlggagtlactacgtctgagtgatcttcttcaatgggacggagcgggtgcggtlcc tggacagata  
20 cttccataaccaggaggagaacgtgcgttcgacagcgacgtgggggagtlccgggcggtagcggagctggggcgg  
cctgatgccgagtlac tggacagccagaaggacAtcc tggagacGAgcgggccggtggacacctactgcagac  
acaactacggggtlgtgagagcttcacagtcagcggcgag (SEQ ID NO: 2 3 7) ;

DRB1\*1340 :

ttggagtlactacgtctgagtgatcttcttcaatgggacggagcgggtgcggtlcc tggacagata  
25 accaggaggagAACgtgcgttcgacagcgacgtgggggagtlaccgggcggtagcggagctggggcggcctgatgc  
cgagtlac tggacagccagaaggacAtcc tggagacGAgcgggccggtggacacctactgcagacacaactac  
ggggtlgtGgagagcttcacagtcagcggcg (SEQ ID NO: 2 3 8) ;

DRB1\*1341 :

cacgtttcttggagtactctacgtctgagtgicatttcttcaatgggacggagcgggtgcggtAcctggacagata  
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cctgatgccgagtlactggaacagccagaaggacatccttgaagacGAgcgggcccgggtggacacctactgcagac  
5 acaactacggggttggtagagcttcacagtcagcggcgag (SEQ ID NO: 2 3 9) ;

DRB1\*1342 :

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cctgatgccgagtlactggaacagccagaaggacTtccitgaagaCaggcgggcccgggtggacacctactgcagac  
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DRB1\*1343 :

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cctgCtgcgggagcacitggaacagccagaaggacctccttgaagacGAgcgggcccgggtggacacctactgcagac  
15 acaactacggggttgtGgagagcttcacagtcagcggcga (SEQ ID NO: 2 4 1) ;

DRB1\*1344 :

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cctgatgccgagtlactggaacagccagaaggacctcctggagcagaggcgggcccgggtggacacctactgcagac  
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DRB1\*1345 :

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accaagaggagtlactgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgccctgCtgc  
ggagcacitggaacagccagaaggacAtccttgaagacGAgcgggcccgggtggacacctactgcagacacaactac  
25 ggggttggtagag (SEQ ID NO: 2 4 3) ;

DRB1\*1346 :

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DRB1\*1347 :

- 5 cactgttcttggagtagcttagctCtgagtgicatttcttcaatgggacggagcgggtgcggttccTggacagata  
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cctgtagccgagtagtggaacagccagaaggacTtccTggaagacaggcgggcccTggtagcaccttagcagac  
acaactacggggttggtgagagcttcacGgtgcagcggcgag (SEQ ID NO: 2 4 5) ;

DRB1\*1348 ;

- 10 cactgttcttggagtagcttagctCtgagtgicatttcttcaatgggacggagcgggtgcggttccTggacagata  
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cctaGcgccgagtagtggaacagccagaaggacatccTggaagacGAgcgggcccggtagcaccttagcagac  
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DRB1\*1349 :

- 15 cactgttcttggagtagcttagctCtgagtgicatttcttcaatgggacggagcgggtgcggttccTggacagata  
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cctaGcgccgagtagtggaacagccagaaggacTtccTggaagaCaggcgggcccggtagcaccttagcagac  
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DRB1\*1350 :

- 20 cactgttcttggagtagcttagctCtgagtgicatttcttcaatgggacggagcgggtgcggttccTggacagata  
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cctgtagccgagtagtggaacagccagaaggacTtccTggaagaCaggcgggcccggtagcaccttagcagac  
acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 2 4 8) ;

DRB1\*1351 :

- 25 cactgttcttggagtagcttagctCtgagtgicatttcttcaatgggacggagcgggtgcggttccTggacagata  
cttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagtagcgggcgTtagcggagctggggcgg  
cctgtagccgagtagtggaacagccagaaggacatccTggaagacgagcgggcccggtagcaccttagcagac

acaactacgggggttgaggagagcttcacagtcagcggcgag (SEQ ID NO: 249) ;

DRB1\*1352 :

cacgtlcltggaglacclacgcltgagtgclatllcllcaalgggacggagcgggtgcggtlccctggaCagata  
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 5 cctgatgccgagtlactggaacagccagaaggacAtccttggaagacGAgcgggcgcggtggacacctactgcagac  
 acaactacgggttgtGgagagcltcacagtg (SEQ ID NO: 250) ;

DRB1\*1353 :

cacgtttcttggagttacitacgtctgagtgicalttcttcaatgggacggagcgggtgcggttcttggagagata  
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10 cctgatgccgagttacitggaacagccagaaggacatcttgggaagacGAgcgggcccgcggtggacacctactgcagac  
acaactacgggggttgttGgagagcttcacagtcagcggcga (SEQ ID NO: 251) ;

DRB1\*1354 :

cacgtttcttggagtagctctacgtctgagtgctatttcttcaatgggacggagcgggtgcgggtccctggacagata  
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 15 cctgtcgcggagtcctggaacagccagaaggacttcttgaagacGAgcgggccgctgggtagcaccttactgcagac  
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DRB1\*1355 :

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20 gCgccgagctacggaaacagccagaaggacTtccctggaagacaggcggggcccTggtggacacctactgcagacacaa  
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DRB1\*140101 :

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 25 gcgggtgcggTlccTggacagatactTccataaccaggaggagTlctgTcgctTcgacagcgacgtgggggagTac  
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NO: 2 5 4) ;

DRB1\*140102 :

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5 cctgCtgcgggagcactggaacagccagaaggacctcctggagcggaggcgggcccAggtggacacctactgcagac  
acaactacggggttgtGg(SEQ ID NO: 2 5 5) ;

DRB1\*1402 :

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10 gcgggtgcggtlccctggagagatacttccataaccaGaggagAAcgtgcgttcgacagcgacgtgggggagttac  
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NO: 2 5 6) ;

DRB1\*1403 :

15 atggtgtgtctgaggctccctggaggctcctgcatggcagTctgacagtgacactgaatggtgtctgagctccccac  
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cgggcggtgacggagctggggcggcctgagccgagttactggaacagccagaaggacctcctggaagacaggcggg  
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20 NO: 2 5 7) ;

DRB1\*1404 :

atggtgtgtctgaggctccctggaggctcctgcatggcagTctgacagtgacactgaatggtgtctgagctccccac  
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25 cgggcggtgacggagctggggcggcctgctgcgggagcactggaacagccagaaggacctcctggagcggaggcggg  
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NO: 2 5 8) ;

DRB1\*140501 :

cacgtttcttggagtactctacgtctgagtgtaAtttcttcaatgggacggagcgggtgcggttccctggacagata  
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cctgaigcTgagtagtggacagccagaaggaccttctggagcggaggcgggcccagggtggacacctatTgcagac  
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DRB1\*140502 :

cacgtttcttggagtactctacgtctgagtgtaAtttcttcaatgggacggagcgggtgcggttccctggacagata  
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cctgaigccgagtagtggacagccagaaggaccttctggagcggaggcgggcccagggtggacacctatTgcagac  
10 acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 2 6 0) ;

DRB1\*1406 :

cacgtttcttggagtactctacgtctgagtgtaAtttcttcaatgggacggagcgggtgcggttccctggaGagata  
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cctgaigccgagtagtggacagccagaaggaccttctggagcagaggcgggcccagggtggacacctatTgcagac  
15 acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 2 6 1) ;

DRB1\*140701 :

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20 acaactacggggttgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 2 6 2) ;

DRB1\*140702 :

cacgtttcttggagtactctacgtctgagtgtaAtttcttcaatgggacggagcgggtgcggttccctggacagata  
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cctgCtgcggagcactggacagccagaaggaccttctggagcggaggcgggcccagggtggacacctatTgcagac  
25 acaactacggggttgtGgagagcttcacGgtgcagcggcgag (SEQ ID NO: 2 6 3) ;

DRB1\*1408 :

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acaactacggggtgtGgagagcttcacagtcagcggcgga (SEQ ID NO: 2 6 4) ;

DRB1\*1409 :

5 tttcttggagtlacttctacgttcgaGtgicatttcttcaatgggacggagcgggtgcggttcc tggacagatacttc  
CataaccaGgaggagAacgtgcgttcgacagcgacgtgggggagtlaccgggcgtgacggagctggggcggcc tgc  
atgccgagtlacttggacagccagaaggacctcc tggagcagaggcgggccggtggacacctactgcagacacaa  
ctacggggttggtagagcttcacagtcagcggcgag (SEQ ID NO: 2 6 5) ;

DRB1\*1410 :

10 tttcttggagcaggltaaacAtgagtgicatttcttcaatgggacggagcgggtgcggttcc tggacagatacttcc  
ataaccaggaggagttcgtgcgttcgacagcgacgtgggggagtlaccgggcgtgacggagctggggcggcc tgc  
tgcggagcac tggacagccagaaggacctcc tggagcggaggcgggccgAggtggacacctatTgcagacacaa  
tlaccggggtgtGgagagcttcacagtcagcgg (SEQ ID NO: 2 6 6) ;

DRB1\*1411 :

15 gacttctacgggtgagtgTatttcttcaatgggacggagcgggtgcggttcc tggacagatacttccataacc  
aggaggagttcgtgcgttcgacagcgacgtgggggagtlaccgggcgtgacggagctggggcggcc tgcAGga  
gtacttggacagccagaaggacctcc tggagcggaggcgggccgAggtggacacctatTgcagacacaaactacggg  
gtgtGg (SEQ ID NO: 2 6 7) ;

DRB1\*1412 :

20 gtctgagtgicatttcttcaatgggacggagcgggtgcggttcc tggacagatacttccataaccaggaggagAAC  
gtgcgttcgacagcgacgtgggggagtlaccgggcgtgacggagctggggcggcc tgcgccgagtlacttggacac  
gccagaaggacctcc tggacagcaggcgggccTgg tggacacctactgcagacacaaactacggggtgtGg (SEQ  
ID NO: 2 6 8) ;

DRB1\*1413 :

25 gacttctacgttcgagtgicatttcttcaatgggacggagcgggtgcggttcc tggacagatacttccataacc  
aggaggagAACgtgcgttcgacagcgacgtgggggagtlaccgggcgtgacggagctggggcggcc tgcgccga  
gtacttggacagccagaaggacctcc tggagcagaggcgggccggtggacacctactgcagacacaaactacggg

gttggg(SEQ ID NO: 2 6 9) ;

DRB1\*1414 :

ttcttggagtactctacgtCtgagtgctatttcttcaatgggacggagcgggtgcggttccctggacagatacttcc  
ataaccaggaggagtTcgtgcgcttcgacagcgacgtgggggagtlaccgggcgggtgacggagctggggcggcciga  
5 tggcagtlactggaacagccagaaggaccttctggagcggaggcgggcccAggtggacacctatgacagacacaac  
taccgggttggtagagcttcacagt(SEQ ID NO: 2 7 0) ;

DRB1\*1415 :

ctctacgggtgagtgTatttcttcaatgggacggagcgggtgcggttccctggacagatacttccataaccaggag  
gagtTcgtgcgcttcgacagcgacgtgggggagtlaccgggcgggtgacggagctggggcggccigtatgccgagtlact  
10 ggaacagccagaaggacttcttgaagacaggcgggcccTggtggacacctactgcagacacaacttaccgggttgt  
Ggagagcttcacagtcag(SEQ ID NO: 2 7 1) ;

DRB1\*1416 :

tiggagtactctacgtctgagtgctatttcttcaatgggacggagcgggtgcggttccctggacagatacttccata  
accaggaggagttcgtgcgcttcgacagcgacgtgggggagtlaccgggcgggtgacggagctggggcggccigtgc  
15 ggagcacttggacagccagaaggacAtcttgaagacGAgcgggcccgggtggacacctactgcagacacaacttacc  
gggttgtGgag(SEQ ID NO: 2 7 2) ;

DRB1\*1417 :

cacgtttcttggagtactctacgtctgaGtgctatttcttcaatgggacggagcgggtgcggttccctggaCagata  
cttccataaccaggaggagAacgtgcgcttcgacagcgacgtgggggagtlaccgggcgggtgacggagctggggcgg  
20 cctgatgccgagtlactggaacagccagaaggaccttctggagcagaggcgggcccgggtggacacctactgcagac  
acaacttaccgggttgtGgagagcttcacagtcagcgg(SEQ ID NO: 2 7 3) ;

DRB1\*1418 :

gagtactctacgtctgagtgctatttcttcaatgggacggagcgggtgcggttccctggagagatacttccataacc  
aggaggagAACgtgcgcttcgacagcgacgtgggggagtlaccgggcgggtgacggagctggggcggccigtatgcTga  
25 gtacttggacagccagaaggaccttctggagcggaggcgggcccAggtggacacctatgacagacacaacttaccgg  
gttgtGgagagcttcacagtcagcggcga(SEQ ID NO: 2 7 4) ;

DRB1\*1419 :

ggggacaccagaccacgtttcttggAgctacictaCgtctgagtgicatttcttcaatgggacggagcgggtgcggt  
tcttgggGagatacttccataaccaggaggagAACgtgcgcttcgacagcgacgtgggggagtagcgggcggtagc  
ggagctggggcggcctgatgccgagtagtgaacagccagaaggaccttctggagcagaAgcgggcccgggtggac  
acctactgcagacacaactacgggggttggtgagagcttcaca (SEQ ID NO: 275) ;

## 5 DRB1\*1420 :

ttggagtactctacgtCtgagtgicatttcttcaatgggacggagcgggtgcggttCcttgggGagatacttccata  
accaggaggagTcgtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcggcctgatgc  
cgagtagtgaacagccagaaggaccttctggagcagaggcgggcccgggtggacacctactgcagacacaactac  
gggggtgtGgaga (SEQ ID NO: 276) ;

## 10 DRB1\*1421 :

ttggagtactctacgtCtgagtgicatttcttcaatgggacggagcgggtgcggttCcttgggGagatacttccata  
accaggaggagAACgtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcggcctgatgc  
cgagtagtgaacagccagaaggaccttctggagcagaAgcgggcccgggtggacacctactgcagacacaactac  
gggggtgtGgaga (SEQ ID NO: 277) ;

## 15 DRB1\*1422 :

cacgtttcttggagtactctacgtCtgagtgicatttcttcaatgggacggagcgggtgcggttCcttgggGagata  
cttccataaccaggaggagTcgtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
cctgCtgcgggagCactggaacagccagaaggaccttcttgggAgaCaggcgggcccgggtggacacctactgcagac  
acaactacgggggttggtgagagcttcacagtagcagcggcgag (SEQ ID NO: 278) ;

## 20 DRB1\*1423 :

cacgtttcttggagtactctacgtCtgagtgicatttcttcaatgggacggagcgggtgcggttCcttgggGagata  
cttccataaccaggaggagTcgtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
cctgatgccgagtagtgaacagccagaaggaccttctggagcggaggcgggcccAggtggacacctatTgcagac  
acaactacgggggtgtGgagagcttcacagtagcagcggcgag (SEQ ID NO: 279) ;

## 25 DRB1\*1424 :

ttcttggagtactctacgtCtgagtgicatttcttcaatgggacggagcgggtgcggttCcttgggGagatacttcc  
ataaccaGaggagAACgtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcggcctga

tgccgagtlactggaacagccagaaggacAtcciggagcagGCgcgggcccgggtggacacclactgcagacacaa  
lacggggltggtagagcctcacagtcagcggcgag (SEQ ID NO: 280) ;

DRB1\*1425 :

tttctlggagtlactctacgtCtgagtgctatcttcaatgggacggagcgggtgcggttcciggacagatactt  
5 tataaccaagaggagTAcgtgcgttcgacagcgacgtgggggagtlaccgggcggtagcggagctggggcggcctg  
CtgcggagCactggaaacagccagaaggacTtccitggaAgaCaggcgggcccgggtggacacclactgcagacaaa  
ctacggggltggtagagcctcacagtcagcggcgag (SEQ ID NO: 281) ;

DRB1\*1426 :

cacgtttctlggagtlactctacgtctgagtgctatcttcaatgggacggagcgggtgcAgttcciggacagata  
10 ctccataaaccaggaggagttcgtgcgttcgacagcgacgtgggggagtlaccgggcggtagcggagctggggcgg  
cctgctgcggagcactggaaacagccagaaggacctcciggagcggagcgggcccagggtggacacctattgcagac  
acaactacggggltgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 282) ;

DRB1\*1427 :

cacgtttctlggagtlactctacgtctgagtgctatcttcaatgggacggagcgggtgcggttcciggaGagata  
15 ctccataaaccaggaggagAACgtgcgttcgacagcgacgtgggggagtlaccgggcggtagcggagctggggcgg  
cctgatgccgagtlactggaaacagccagaaggacTtccitggaagaCaggcgggcccTgggtggacacctactgcagac  
acaactacggggltgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 283) ;

DRB1\*1428 :

cacgtttctlggagtlactctacgggtgagtgctatcttcaatgggacggagcgggtgcggttcciggacagata  
20 ctccataaaccaggaggagttcgtgcgttcgacagcgacgtgggggagtlaccgggcggtagcggagctggggcgg  
cctgCtgcggagcactggaaacagccagaaggacctcciggagcggagcgggcccagggtggacacctattgcagac  
acaactacggggCtgtGgagagcttcaca (SEQ ID NO: 284) ;

DRB1\*1429 :

cacgtttctlggagtlactctacgtctgagtgctatcttcaatgggacggagcgggtgcggttcciggaGagata  
25 ctccataaccaGaggagAACgtgcgttcgacagcgacgtgggggagtlaccgggcggtagcggagctggggcgg  
cctgatgccgagtlactggaaacagccagaaggacctcciggagcagaggcgggcccgggtggacacctactgcagac  
acaactacggggCtgtggagagcttcacagtcagcggcgag (SEQ ID NO: 285) ;

DRBI\*1430 :

t t t c t t g g a g t a c t c t a c g t c t g a G t g t c a t t t c t t c a a t g g g a c g g a g c g g g t g c g g t t c c t g g a C a g a t a c t t c  
C a t a a c c a G g a g g a g A a c g t g c g c t t c g a c a g c g a c g t g g g g g a g t T c c g g g c g g t g a c g g a g c t g g g g c g g c t g  
a t g c c g a g t a c t g g a a c a g c c a g a a g g a c c t c c t g g a g c a g a g g c g g g c c g c g g t g g a c a c c t a c t g c a g a c a c a a  
5 c t a c g g g g t t g g t g a g a g c t t c a c a ( S E Q I D N O : 2 8 6 ) ;

DRBI\*1431 :

t t t c t t g g a g t a c t c t a c g g t g a g t g t T a t t t c t t c a a t g g g a c g g a g c g g g t g c g g t t c c t g g a c a g a t a c t t c  
c a t a a c c a g g a g g a g t t c g t g c g c t t c g a c a g c g a c g t g g g g g a g t a c c g g g c g g t g a c g g a g c t g g g g c g g c t g  
C t g c g g a g c a c t g g a a c a g c c a g a a g g a c c t c c t g g a g c g g a g g c g g g c c g c g g t g g a c a c c t a T t g c a g a c a c a a  
10 c t a c g g g g t t g t G g a g a g c t t c a c a ( S E Q I D N O : 2 8 7 ) ;

DRBI\*1432 :

c a c g t t t c t t g g a g t a c T c t a c g t C t g a g t g t c a t t t c t t c a a t g g g a c g g a g c g g g t g c g g t t c c t g g a c a g a t a  
c t t c c a t a a c c a g g a g g a g t t c g t g c g c t t c g a c a g c g a c g t g g g g g a g t a c c g g g c g g t g a c g g a g c t g g g g c g g  
c c t g C t g c g g a g c a c t g g a a c a g c c a g a a g g a c c t c c t g g a g c G g a g g c g g g c c g c g g t g g a c a c c t a c t g c a g a c  
15 a c a a c t a c g g g g t t g t G g a g a g c t t c a c a g t g c a g c g g c g a g ( S E Q I D N O : 2 8 8 ) ;

DRBI\*1433 :

t t g g a g t a c t c t a c g t c t g a g t g t c a t t t c t t c a a t g g g a c g g a g c g g g t g c g g t t c c t g g a c a g a t a c t t c c a t a  
a c c a g g a g g a g a A c g t g c g c t t c g a c a g c g a c g t g g g g g a g t T c c g g g c g g t g a c g g a g c t g g g g c g g c t g a t g c  
c g a g t a c t g g a a c a g c c a g a a g g a c c t c c t g g a g c a g a g g c g g g c c g A g g t g g a c a c c t a c t g c a g a c a c a a c t a c  
20 g g g g t t g t G g a g a g c t t c a c a g t g c a g c g g c ( S E Q I D N O : 2 8 9 ) ;

DRBI\*1434 :

c a c g t t t c t t g g a g t a c T c t a c g t C t g a g t g t c a t t t c t t c a a t g g g a c g g a g c g g g t g c g g t t c c t g g a c a g a t a  
c t t c c a t a a c c a g g a g g a g t t c g t g c g c t t c g a c a g c g a c g t g g g g g a g t a c c g g g c g g t g a c g g a g c t g g g g c g g  
c c t g a t g c g g a g C a c t g g a a c a g c c a g a a g g a c c t c c t g g a g c g g a g g c g g g c c g c g g t g g a c a c c t a T t g c a g a c  
25 a c a a c t a c g g g g t t g t G g a g a g c t t c a c a g t g c a g c g g c g a g ( S E Q I D N O : 2 9 0 ) ;

DRBI\*1435 :

c a c g t t t c t t g g a g t a c t c t a c g t c t g a g t g t c a t t t c t t c a a t g g g a c g g a g c g g g t g c g g t t c c t g g a c a g a t a

cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcgg  
ccigtCtgcgggagcacitggaacagccagaaggacctccitggagcggaggcgggccgAggtggacacctatTgcagac  
acaactacggggttgtGgagagcttcacagtcagcgag (SEQ ID NO: 2 9 1) ;

DRBI\*1436 :

5 cactttcttggagttactctacgtctgagtgtaatttttcaatgggacggagcgggtgcggttccitggacagata  
cttccataaccaggaggagttcgtgcgcttcgacagcgacgtCgggagttaccgggcggtgacggagctggggcgg  
ccigtatgccgagttactggaacagccagaaggacctccitggagcggaggcgggccgaggtggacacctatTgcagac  
acaactacggggttgtGgagagcttcacagtcagcgcgag (SEQ ID NO: 2 9 2) ;

DRBI\*1437 :

10 cactttcttggagttactctacgtctgagtgtaatttttcaatgggacggagcgggtgcggttccitggacagata  
cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagttaccgggcggtgacggagctggggcgg  
ccigtatgctgagttactggaacagccagaaggacctccitggagcaggCgcgggccgcggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtcagcgcgag (SEQ ID NO: 2 9 3) ;

DRBI\*1438 :

15 cactttcttggagttactctacgtctgagtgtaatttttcaatgggacggagcgggtgcggttccitggacagata  
cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagttaccgggcggtgacggagctggggcgg  
ccigtCtgcgggagcacitggaacagccagaaggacctccitggagcggaggcgggccgaggtggacaaTtactgcagac  
acaactacggggttgtGgagagcttcacagtcagcgcgag (SEQ ID NO: 2 9 4) ;

DRBI\*1439 :

20 cactttcttggagttacctactgtCtgcggttcgacagcgacgtgggggagttaccgggcggtgacggagctggggcgg  
cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagttaccgggcggtgacggagctggggcgg  
ccigtCtgcgggagcacitggaacagccagaaggacctccitggagcggaggcgggccgAggtggacacctatTgcagac  
acaactacggggttgtGgagagcttcacagtcagcgcgag (SEQ ID NO: 2 9 5) ;

DRBI\*1440 :

25 cactttcttggagttactctacgtctgagtgtaatttttcaatgggacggagcgggtgcggttccitggaGagata  
cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagttaccgggcggtgacggagctggggcgg  
ccigtatgccgagttactggaacagccagaaggacctccitggaagaCaggcgggccCTgtggacacctactgcagac



acaactacggggtlggtagagcttcacagtcagcggcgag (SEQ ID NO: 296) ;

DRB1\*1441 :

cacgtttcttggagttacttactgtagtgtagtcttcttcaatgggacggagcgggtgcggttcttggagagata  
cttccataaccaggaggagtTcTtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
5 cctgatgccgagttacgtgaacagccagaaggacctcttggagcagaggcgggcccggtagcaccctatgcagac  
acaactacggggtlggtagagcttcacagtcagcggcgag (SEQ ID NO: 297) ;

DRB1\*1442 :

cacgtttcttggagttacttactgtagtgtagtcttcttcaatgggacggagcgggtgcggttcttggacagata  
cttctataaccaagaggagtAcgtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
10 cctgatgccgagttacgtgaacagccagaaggacctcttggagcggaggcgggcccaggtagcaccctatgcagac  
acaactacggggtlggtagagcttcacagtcagcggcgag (SEQ ID NO: 298) ;

DRB1\*1443 :

cacgtttcttggagttacttactgtagtgtagtcttcttcaatgggacggagcgggtgcggttcttggacagata  
cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
15 cctgatgctgagttacgtgaacagccagaaggacctcttggagcggaggcgggcccaggtagcaccctatgcagac  
acaactacggggtlgtggagagcttcacagtcagcggcgag (SEQ ID NO: 299) ;

DRB1\*1444 :

cacgtttcttggagttacttactgtagtgtagtcttcttcaatgggacggagcgggtgcggttcttggacagata  
cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
20 cctgatgctgagttacgtgaacagccagaaggacctcttggagcggaggcgggcccaggtagcaccctatgcagac  
acaactacggggtlgtggagagcttcacagtcagcggcgag (SEQ ID NO: 300) ;

DRB1\*1445 :

cacgtttcttggagttacttactgtagtgtagtcttcttcaatgggacggagcgggtgcggttcttggacagata  
cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
25 cctgatgctgagttacgtgaacagccagaaggacctcttggagcggaggcgggcccaggtagcaccctatgcagac  
acaactacggggtlgtggagagcttcacagtcagcggcgag (SEQ ID NO: 301) ;

DRB1\*150101 :

atggigtgtcgaagctcccggaggctccgtgcatgacagcgctgacagtgacactgatggigtgagctcccac  
tggctttgtctggggacacccgaccacgtttccgtggcagcctaagagggagtgicatttcttcaatgggacgga  
gccccgtcgggttccggacagatacttctataaccaggaggagtcggtgcgcttcgacagcgacgtgggggagttc  
cgggcggtagcgagctggggcgccgtgacgtgagttacgtgaacagccagaaggacatccgtggagcaggcgcggg  
5 ccgcggtggacacctactgcagacacaactacggggttggagagcttcacagtcagcgcgag (SEQ ID  
NO: 302) ;  
DRB1\*150102 :  
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cttctataaccaggaggagtcggtgcgcttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgg  
10 cctgacgtgagttacgtgaacagccagaaggacatccgtggagcaggcgcgggccggtggacacctactgcagac  
acaactacggAgttgtGgagagcttcacagtcagcg (SEQ ID NO: 303) ;  
DRB1\*150103 :  
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cttctataaccaggaggagtcggtgcgcttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgg  
15 cctgacgtgagttacgtgaacagccagaaggacatccgtggagcaggcgcgggccggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtcagcg (SEQ ID NO: 304) ;  
DRB1\*150104 :  
cacgtttccgtggcagcctaagagGgagtgicatttcttcaatgggacggagcgggtgcggttccggacagata  
cttctataaccaggaggagtcggtgcgcttcgacagcgacgtgggggagttccgggcggtagcgagctggggcgg  
20 cctgatgccgagttacgtgaacagccagaaggacAtcgtggagcaggCgcgggcccgggtggacacctactgcagac  
acaactacggggttgtGgagagcttcacagtcagcg (SEQ ID NO: 305) ;  
DRB1\*150201 :  
ggggacacccgaccacgtttccgtggcagcctaagagGgagtgicatttcttcaatgggacggagcgggtgcggt  
tccggacagatacttctataaccaggaggagtcggtgcgcttcgacagcgacgtgggggagttccgggcggtagc  
25 ggagctggggcgccgtgacgtgagttacgtgaacagccagaaggacAtcgtggagcaggCgcgggcccgggtggac  
acctactgcagacacaactacggggttggtagagcttcacagtcagcg (SEQ ID NO: 306) ;  
DRB1\*150202 :

gagtgtcatttcttcaatgggacggagcgggtgcggttccitggacagatacttctataaccaggaggagtcctgtc  
gccttcgacagcgacgtgggggagTccgggcggtagcggagctggggcggcctgatgccgagtagtgaacagcca  
gaaggacAtcctggagcagGcgggccgcggtagcacctactgcagacacaactacggggttggtg (SEQ ID  
NO: 307) ;

5 DRB1\*150203 :

cacgtttccitggcagcctaagaggagtgtagtatttcttcaatgggacggagcgggtgcggttccitggacagata  
cttctataaTcaggaggagtcctgtcgccttcgacagcgacgtgggggagTccgggcggtagcggagctggggcgg  
cctgacgtgagtagtgaacagccagaaggacatcctggagcaggcgggccgcggtagcacctactgcagac  
acaactacggggttggtg (SEQ ID NO: 308) ;

10 DRB1\*1503 :

ggggacacccgaccacgtttccitggcagcctaagagGgagtgtagtatttcttcaatgggacggagcgggtgcgg  
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ggagctggggcggcctgacgcTgagtagtgaacagccagaaggacAtcctggagcaggCcgggccgcggtagcac  
acctactgcagacacaactacggggttggtGgagagcttcacagtgcagcggcgag (SEQ ID NO: 309) ;

15 DRB1\*1504 :

ttccitggcagcctaagagGgagtgtagtatttcttcaatgggacggagcgggtgcggttccitggacagatacttct  
ataaccaggaggagtcctgtcgccttcgacagcgacgtgggggagTccgggcggtagcggagctggggcggcctga  
cgcTgagtagtgaacagccagaaggacTtccitggagcaggCcgggccgcggtagcacctactgcagacacaac  
tacggggttggtGgagagcttcacagtgcagcgg (SEQ ID NO: 310) ;

20 DRB1\*1505 :

ttccitggcagcctaagagGgagtgtagtatttcttcaatgggacggagcgggtgcggttccitggacagatacttct  
ataaccaggaggagtcctgtcgccttcgacagcgacgtgggggagTccgggcggtagcggagctggggcggcctga  
cgcTgagtagtgaacagccagaaggaccTtccitggagcaggCcgggccgcggtagcacctactgcagacacaac  
tacggggttggtGgagagcttcacagtgcagcgg (SEQ ID NO: 311) ;

25 DRB1\*1506 :

ctitggcagcctaagaggagtgtagtatttcttcaatgggacggagcgggtgcggttccitggacagatacttctata  
accaggaggagtcctgtcgccttcgacagcgacgtgggggagTccgggcggtagcggagctggggcggcctgacgc

tgagtlactlgaacagccagaaggacatccitggagcaggcgccggcggtlggacacctactgcagacacaactac  
ggggltlgtggagagcttcacagtcagcggcgag (SEQ ID NO: 3 1 2) ;

DRB1\*1507 :

tttccitgtggcagccaaagagGgagtgatcttcttcaatgggacggagcgggtlccgtlccitggacagatacttc  
5 talaaccaggaggagtcctgtcgcttcgacagcgacgtgggggagtlaccgggcggtagcggagctlgggcgccctg  
acgcTgagtlactlgaacagccagaaggacAtccitggagcaggCgcgggccggtlggacacctactgcagacacaa  
ctacggggltgtGgagagc (SEQ ID NO: 3 1 3) ;

DRB1\*1508 :

cacgtttccitgtggcagccaaagaggagtgatcttcttcaatgggacggagcgggtlccgtlccitggacagata  
10 ctcttalaaccaggaggagtcctgtcgcttcgacagcgacgtgggggagtlccgggcggtagcggagctlgggcg  
cctgacgctgagtlactlgaacagccagaagAacatccitggagcaggCgcgggccggtlggacacctactgcagac  
acaactacggggltgtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 1 4) ;

DRB1\*1509 :

cacgtttccitgtggcagccaaagaggagtgatcttcttcaatgggacggagcgggtlccgtlccitggacagata  
15 ctcttalaaccaggaggagtcctgtcgcttcgacagcgacgtgggggagtlccAggcggtagcggagctlgggcg  
cctgacgctgagtlactlgaacagccagaaggacatccitggagcaggCgcgggccggtlggacacctactgcagac  
acaactacggggltgtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 1 5) ;

DRB1\*1510 :

gtttccitgtggcagccaaagagGgagtgatcttcttcaatgggacggagcgggtlccgtlccitggacagatactt  
20 ctalaaccaggaggagtcctgtcgcttcgacagcgacgtgggggagtlccgggcggtagcggagctlgggcgcc  
gacgctgagtlactlgaacagccagaaggacatccitggaagacgAgcgggccggtlggacacctactgcagacac  
actacggggltgtGgagagc (SEQ ID NO: 3 1 6) ;

DRB1\*1511 :

cacgtttccitgtggcagccaaagagGgagtgatcttcttcaatgggacggagcgggtlccgtlccitggacagata  
25 ctcttalaaccaggaggagtcctgtcgcttcgacagcgacgtgggggagtlaccgggcggtagcggagctlgggcg  
cctgacgctgagtlactlgaacagccagaaggacAtccitggagcaggCgcgggccggtlggacacctactgcagac  
acaactacggggltgtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 1 7) ;

DRB1\*1512 :

gcacgtttccgtgtggcagcctaagagGgagtgatcatttcttcaatgggacggagcgggtgcggttccgtggacagat  
acttctataaaccaggaggagtcggtgcgcttcgacagcgacgtgggggagltccgggcgggtgacggagctggggcg  
gcctaGCccgagttacgggaacagccagaaggacAtcctggagcaggCgcgggccggtggacacctactgcaga  
5 cacaactacggggtgtGgagagcttcacagtcagcggcgag (SEQ ID NO: 318) ;

DRB1\*1513 :

cacgtttccgtgtggcagcctaagagGgagtgatcatttcttcaatgggacggagcgggtgcggttccgtggacagata  
cttctataaaccaggaggagtcggtgcgcttcgacagcgacgtgggggagltccgggcgggtgacggagctggggcg  
cctgacgcTgagttacgggaacagcca...ggacAtcctggagcaggCgcgggccggtggacacctactgcagac  
10 acaactacggggtgtGgagagcttcacagtcagcgg (SEQ ID NO: 319) ;

DRB1\*160101 :

atgggtgtgtcgaagctccctggaggctcctgcattgacagcgctgacagtacactgatgggtgtgagctccccac  
tggctttggctggggacacccgaccacgtttccgtgtggcagcctaagagGgagtgatcatttcttcaatgggacgga  
gcgggtgcggttccgtggacagatacttctataaaccaggaggagtcggtgcgcttcgacagcgacgtgggggagttac  
15 cgggcgggtgacggagctggggcgccctgacgtgagttacgggaacagccagaaggacTtcttgggaagacaggcgCg  
ccgcggtggacacctactgcagacacaactacggggtgggtgagagcttcacagtcagcggcgag (SEQ ID  
NO: 320) ;

DRB1\*160102 :

cgtttccgtgtggcagcctaagagGgagtgatcatttcttcaatgggacggagcgggtgcggttccgtggacagatact  
20 tctataaaccaggaggagtcggtgcgcttcgacagcgacgtgggggagltccgggcgggtgacggagctggggcgcc  
tgacgtgagttacgggaacagccagaaggacTtcttgggaagaCaggcgggccggtggacacctactgcagacac  
aactacggggtgggtgagagcttcaca (SEQ ID NO: 321) ;

DRB1\*160201 :

atgggtgtgtcgaagctccctggaggctcctgcattgacagcgctgacagtacactgatgggtgtgagctccccac  
25 tggctttggctggggacacccgaccacgtttccgtgtggcagcctaagagGgagtgatcatttcttcaatgggacgga  
gcgggtgcggttccgtggacagatacttctataaaccaggaggagtcggtgcgcttcgacagcgacgtgggggagttac  
cgggcgggtgacggagctggggcgccctgacgtgagttacgggaacagccagaaggaccttcttgggaagacaggcgCg

ccgcggtggacacctacgcagacacaactacggggtlgtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 2 2) ;

DRB1\*160202 :

tttccctgtggcagccaaagagGgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagatacttc  
5 tataaccaggaggagtcctgtcgcttcgacagcgacgtgggggaglacgggcgggtgacggagctggggcggccctg  
acgtgagtlacttgaacagccagaaggacctcttgaagaCaggcgggcccgggtggacacctacgcagacacaa  
ctacggggtlgtg (SEQ ID NO: 3 2 3) ;

DRB1\*1603 :

atggtgtgtctgaagctcccaggagctcttgcatacagcgctgacagtgacacatgattggtgtgagctcccac  
10 tggcttggctggggacacccgaccacgttcttctgtggcagccaaagaggagtgatcttcttcaatgggacgga  
gcgggtgcggttccctggacagatacttctataaccaggaggagtcctgtcgcttcgacagcgacgtgggggaglac  
cgggcgggtgacggagctggggcggccctgacgtgagtlacttgaacagccagaaggacctcttgaacagaggCcg  
ccgcggtggacacctacgcagacacaactacggggtlgtgagagcttcacagtcagcggcgag (SEQ ID  
NO: 3 2 4) ;

15 DRB1\*1604 :

tggcagccaaagaggagtgatcttcttcaatgggacggagcgggtgcggttccctggacagatacttctataacc  
aGaggagtcctgtcgcttcgacagcgacgtgggggaglacgggcgggtgacggagctggggcggccctgacgcTga  
gtacttgaacagccagaaggacTtcttgaagaCaggcgggcccTggtggacacctacgcagacacaactacggg  
gtlgtg (SEQ ID NO: 3 2 5) ;

20 DRB1\*1605 :

ctgtggcagccaaagagGgagtgatcttcttcaatgggacggagcgggtgcggttccctggacagatacttctata  
accaggaggagtcctgtcgcttcgacagcgacgtgggggaglacgggcgggtgacggagctggggcggccctgacgc  
tgagtlacttgaacagccagaaggacAtcttgaacagaggcgCgccggtggacacctacgcagacacaactac  
ggggtlgtgag (SEQ ID NO: 3 2 6) ;

25 DRB1\*1607 :

cacgttcttctgtggcagccaaagaggagtgatcttcttcaatgggacggagcgggtgcggttccCggacagala  
cttctataaccaggaggagtcctgtcgcttcgacagcgacgtgggggaglacgggcgggtgacggagctggggcgg

ccTgacGctgagTlacTggaacagccagaaggacaTccTggaagacaggcgcgccggtTggacacctacTgcagac  
acaactacggggTtggTgagagctTcacagtGca (SEQ ID NO: 3 2 7) ;

DRB1\*1608 :

cacgtTtccTgTggcagccTaaGagGgagTgtcattTctTcaatgggacggagcgggtTcggtTccTggacagata  
5 ctTctataaccaggaggagaAcgtTgcgtTcgacagcgacgtTgggggagTaccgggcggTgacggagctTgggcgg  
ccTgacGctgagTlacTggaacagccagaaggacTtccTggaagacaggcgcgccggtTggacacctacTgcagac  
acaactacggggTtggTgagagctTcacagtGcagcggcgag (SEQ ID NO: 3 2 8) ;

DRB3\*010101 :

ggggacacccgaccacgtTtctTggagctGcTlaagTctgagTgtcattTctTcaatgggacggagcgggtTcggt  
10 accTggaCagatactTccataaccaggaggagTtCtGcgtTcgacagcgacgtTgggggagTaccgggcggTgac  
ggagctTgggcggccTgtTgccgagTccTggaacagccagaaggacctccTggagcagaagcggggccGggtggac  
aaTtactGcagacacaactacggggTtggTgagagctTcacagtGcagcggcgag (SEQ ID NO: 3 2 9) ;

DRB3\*01010201 :

aTggTgtTctgaagctcccTggaggcTccagctTggcagcgtTgacagtGacacTgaTggtGctgagctcccgac  
15 TggctTtCgtTgggacacccgaccacgtTtctTggagctGcTlaagTctgagTgtcattTctTcaatgggacgga  
gcgggtTcggtTaccTggacagatactTccataaccaggaggagTtccTgcgtTcgacagcgacgtTgggggagTlac  
cgggcggTgacggagctTgggcggccTgtTgccgagTccTggaacagccagaaggacctccTggagcagaagcggg  
gccGggtggacaattactGcagacacaactacggggTtggTgagagctTcacagtGcagcggcgag (SEQ ID  
NO: 3 3 0) ;

20 DRB3\*010103 :

ggggacacccgaccacgtTtctTggagctGcTlaagTctgagTgtcattTctTcaatgggacggagcgggtTcggt  
accTggaCagatactTccataaccaggaggagTtCtGcgtTcgacagcgacgtTgggggagTaccgggcggTgac  
ggagctTgggcggccTgtTgccgagTccTggaacagccagaaggacctccTggagcagaagcggggccGggtggac  
aaTtactGcagacacaactacggggTtggTgagagc (SEQ ID NO: 3 3 1) ;

25 DRB3\*010104 :

cacgtTtctTggagctGcTlaagTctgagTgtcattTctTcaatgggacggagcgggtTcggtTaccTggacagata  
ctTccataaccaggaggagTtccTgcgtTcgacagcgacgtTgggggagTaccgggcggTgacggagctTgggcgg

ccgtgcgccgagtccttggaacagccagaaggacctcctggagcagaagcggggccgggtggacaaTtactgcagac  
acaactacggAggttggg(SEQ ID NO: 3 3 2) ;

DRB3\*0102 :

ggggacacccgaccacgtttcttggagctgTgtaagctgagtgcatttcttcaatgggacggagcgggtgcggt  
5 acctggaCagatacttccataaccaggaggagttcCtgcgcttcgacagcgacgtgggggagtlaccgggcggtagc  
ggagctggggcggcctgtGcccgagtccttggaacagccagaaggacctcctggagcagaagcggggccGggtggac  
aaTtactgcagacacaactacggggttggtagagc(SEQ ID NO: 3 3 3) ;

DRB3\*0103 :

cacgtttcttggagctgcGtaagctgagtgcatttcttcaatgggacggagcgggtgcggtacctggaCagata  
10 ctltccataaccaggaggagttcCtgcgcttcgacagcgacgtgggggagtlaccgggcggtagcggagctggggcgg  
cctgtGcccgagtccttggaacagccagaaggacctcctggagcagaagcggggccGggtggacaaTtactgcagac  
acaactacggggttggtagagc(SEQ ID NO: 3 3 4) ;

DRB3\*0104 :

cacgtttcttggagctgcGtaagctgagtgcatttcttcaatgggacggagcgggtgcggtacctggaCagata  
15 ctltccataaccaggaggagttcCtgcgcttcgacagcgacgtgggggagtlaccgggcggtagcggagctggggcgg  
cctgtGcccgagtccttggaacagccagaaggacctcctggagcagaagcggggccGggtggacaaTtactgcagac  
acaactacggggttggtagagcttcaca(SEQ ID NO: 3 3 5) ;

DRB3\*0105 :

cacgtttcttggagctgcGtaagctgagtgcatttcttcaatgggacggagcgggtgcggtacctgAacagata  
20 ctltccataaccaggaggagttcCtgcgcttcgacagcgacgtgggggagtlaccgggcggtagcggagctggggcgg  
cctgtgcgccgagtccttggaacagccagaaggacctcctggagcagaagcggggccgggtggacaaTtactgcagac  
acaactacggggttggtagagcttcacagtcagcggcg(SEQ ID NO: 3 3 6) ;

DRB3\*0106 :

cacgtttcttggagctgcGtaagctgagtgcatttcttcaatgggacggagcgggtgcggtacctggaCagata  
25 ctltccataaccaggaggagttCgtgcgcttcgacagcgacgtgggggagtlaccgggcggtagcggagctggggcgg  
cctgtGcccgagtccttggaacagccagaaggacctcctggagcagaagcggggccGggtggacaaTtactgcagac  
acaactacggggttggtag(SEQ ID NO: 3 3 7) ;



DRB3\*0107 :

cacgtttcttggagctgcGtaagcttgagtgctatttcttcaatgggacggagcgggtgcggtaccitggacagata  
cttccataaccaggaggagtagcgcgcttcgacagcgacgtgggggagtagcgggcggtgaggagctggggcgg  
cctgatgccgagtagtggaaacagccagaaggacctcctggagcagaAgcggggccAggtggacaaTtactgcagac  
5 acaactacggggttggtag(SAQ ID NO: 3 3 8) ;

DRB3\*0108 :

cacgtttcttggagctgcGtaagcttgagtgctatttcttcaatgggacggagcgggtgcggtaccitggacagata  
cttccataaccaggaggagAACgtgcgcttcgacagcgacgtgggggagtagcgggcggtgacggagctggggcgg  
cctgtGcccgagtagtggaaacagccagaaggacctcctggagcagaagcggggccGgtggacaaTtactgcagac  
10 acaactacggggttggtagagcttcacagtgcagcgg(SAQ ID NO: 3 3 9) ;

DRB3\*0109 :

cacgtttcttggagctgcGtaagcttgagtgctatttcttcaatgggacggagcgggtgcggttcttggagagaca  
cttccataaccaggaggagtagGcgcttcgacagcgacgtgggggagtagcgggcggtgacggagctggggcgg  
cctgtGcccgagtagtggaaacagccagaaggacctcctggagcagaagcggggccGgtggacaaTtactgcagac  
15 acaactacggggttggtagagcttcacagtgcagcgg(SAQ ID NO: 3 4 0) ;

DRB3\*0110 :

cacgtttcttggagctgcGtaagcttgagtgctatttcttcaatgggacggagcgggtgcggtaccitggacagata  
cttccataaccaggaggagtagGcttcgacagcgacgtgggggagtagcgggcggtgacggagctggggcgg  
cctgtGcccgagtagtggaaacagccagaaggacctcctggagcagaagcggggccgggtggacaaTtactgcagac  
20 acaactacggggttggtag(SAQ ID NO: 3 4 1) ;

DRB3\*0201 :

atgggtgtctgaagctcccaggagctccagcttggcagcgttgacagtacacitgattggtgtgagctcccgac  
tggctttGctggggacacccgaccagctttcttggagctgcttaagcttgagtgctatttcttcaatgggacgga  
gccccgtgcggttcttggagagacattccataaccaggaggagtagcgcgcttcgacagcgacgtgggggagtag  
25 cgggcggtgaggagctggggcggcctgatgccgagtagtggaaacagccagaaggacctcctggagcagaagcggg  
gccaggtaggacaaTtactgcagacacaactacggggtgtGgagagcttcacagtgcagcggcgag(SAQ ID  
NO: 3 4 2) ;

DRB3\*020201 :

ggggacacccgaccacgtttcttgGagcigcttaagtcigagtgicatttcttcaatgggacggagcgggtgcggt  
tcciggagagaCacttccataaccaggaggaglacgCgcgcttcgacagcgacgtgggggagtlaccgggcggtgaG  
ggagciggggcgccctgaigccgagtlaciggaacagccagaaggaccitctggagcagaagcggggccagggtggac  
5 aaTtactgcagacacaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 4 3) ;

DRB3\*020202 :

cacgtttcttggagcigcttaagtcigagtgicatttcttcaatgggacggagcgggtgcggttcciggagagaCa  
cttccataaccaggaggagtlacgCgcgcttcgacagcgacgtgggggagtlaccgggcggtgaGggagciggggcgg  
ccigatgccgagtlaciggaacagccagaaggaccitctggagcagaagcggggccAggtggacaActactgcagac  
10 acaactacggggttggtg (SEQ ID NO: 3 4 4) ;

DRB3\*020203 :

cacgtttcttggagcigcttaagtcigagtgicatttcttcaatgggacggagcgggtgcggttcciggagagaca  
cttccataaccaggaggagtlacgCgcgcttcgacagcgacgtgggggagtlaccgggcggtgagggagciggggcgg  
ccigatgccgagtlaciggaacagccagaaggaccitctggagcagaagcggggccagggtggacaattactgcagC  
15 acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 4 5) ;

DRB3\*020204 :

cacgtttcttggagcigcttaagtcigagtgicatttcttcaatgggacggagcgggtgcggttcciggagagaca  
cttccataaccaggaggagtlacgCgcgcttcgacagcgacgtgggggagtlaccgggcggtgaGggagciggggcgg  
ccigatgcGgagtlaciggaacagccagaaggaccitctggagcagaagcggggccagggtggacaattactgcagac  
20 acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 4 6) ;

DRB3\*0203 :

tiggagcigcttaagtcigagtgicatttcttcaatgggacggagcgggtgcggttcciggagagaCacttccata  
accaGgaggagtcggtgcgcttcgacagcgacgtgggggagtlaccgggcggtgaGggagciggggcgccctgaigc  
cgagtlaciggaacagccagaaggaccitctggagcagaagcggggccagggtggacaattactgcagacacaactac  
25 ggggttggtgaga (SEQ ID NO: 3 4 7) ;

DRB3\*0204 :

cacgtttcttggagcigcttaagtcigagtgicatttcttcaatgggacggagcgggtgcggttcciggagagaca

cttccataaccaggaggagtagcgcgcttcgacagcgacgtggggagtagcgggcggtgaGggagctggggcgcc  
ccigalgccgagtagtggaacagccagaaggacctccigggagcagaagcggggccGggtggacaActtagtcagac  
acaactacggggttgGgagagcttcacagtagcggcgag (SEQ ID NO: 348) ;

DRB3\*0205 :

5 cgtttcttggagctgcttaagtcgagtgctatttcttcaatgggacggagcgggtgcggttcciggaGagatact  
ttccataaccaggaggagtagCgcgcttcgacagcgacgtggggagtagcgggcggtgaGggagctggggcgcc  
tgatgccgagtagtggaacagccagaaggacctccigggagcagaagcggggccaggtaggacaaTtagtcagacac  
aaactacggggttggtgagagcttcacagtagcag (SEQ ID NO: 349) ;

DRB3\*0206 :

10 cactttcttggagctgcttaagtcgagtgctatttcttcaatgggacggagcgggtgcggttccigggagagaca  
cttccataaccaggaggagAacgCgcgcttcgacagcgacgtggggagtagcgggcggtgaGggagctggggcgcc  
cctgtagccgagtagtggaacagccagaaggacctccigggagcagaagcggggccaggtaggacaaTtagtcagac  
acaactacggggttggtg (SEQ ID NO: 350) ;

DRB3\*0207 :

15 ttggagctgcttaagtcgagtgctatttcttcaatgggacggagcgggtgcggttccigggagagacattccata  
accaggaggagtagcgcgcttcgacagcgacgtggggagtagcgggcggtgaGggagctggggcgcctgTCgc  
cgagtagtggaacagccagaaggacctccigggagcagaagcggggccaggtaggacaaTtagtcagacacaaactac  
ggggttggtgagag (SEQ ID NO: 351) ;

DRB3\*0208 :

20 cactttcttggagctgcttaagtcgagtgctatttcttcaatgggacggagcgggtgcggttccigggagagaca  
cttccataaccaggaggagtagcgcgcttcgacagcgacgtggggagtagcgggcggtgaGggagctggggcgcc  
cctaGCccgagtagtggaacagccagaaggacctccigggagcagaagcggggccaggtaggacaaTtagtcagac  
acaactacggggttggtg (SEQ ID NO: 352) ;

DRB3\*0209 :

25 cactttcttggagctgcttaagtcgagtgctatttcttcaatgggacggagcgggtgcggttccigggagagaca  
cttccataaccaggaggagtagCgcgcttcgacagcgacgtggggagtagcgggcggtgacggagctggggcgcc  
cctgtcgccgagtagtggaacagccagaaggacctccigggagcagaagcggggccAggtggacaaTtagtcagac

acaactacggggttggtgagagcttcaca (SEQ ID NO: 3 5 3) ;

DRB3\*0210 :

ggggacacccgaccacgtttcttgGagctgcttaagctgagtgctatttcttcaatgggacggagcgggtgcggt  
tccitggagagaCacttccataaaccaggaggagtagCgcgcttcgacagcgacgtgggggagtagccggcggtgac  
5 ggagctggggcgccctgatgccgagtagtgaacagccagaaggacctccitggagcagaagcggggccAggtggac  
aaTtagctgcagacacaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 5 4) ;

DRB3\*0211 :

ggggacacccgaccacgtttcttgagctgcttaagctgagtgctatttcttcaatgggacggagcgggtgcggt  
tccitggagagacacttccataaaccaggaggagtagCgcgcttcgacagcgacgtgggggagtagccggcggtgaG  
10 ggagctggggcgccctgatgccgagtagtgaacagccagaaggacAtccitggagcagaagcggggccaggtaggac  
aaTtagctgcagacacaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 5 5) ;

DRB3\*0212 :

cacgtttcttgagctgcttaagctgagtgctatttcttcaatgggacggagcgggtgcggttccitggagagaCa  
cttccataaaccaggaggagtagCgcgcttcgacagcgacgtgggggagtagccggcggtgaGggagctggggcgg  
15 cctgatgccgagtagtgaacagccagaaggacctccitggagcagaagcggggccaggtaggacaaTtagctgcagac  
acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 5 6) ;

DRB3\*0213 :

cacgtttcttgagctgcttaagctgagtgctatttcttcaatgggacggagcgggtgcggttccitggagagaca  
cttccataaaccaggaggagtagCgcgcttcgacagcgacgtgggggagtagccggcggtgagggagctggggcgg  
20 cctgatgccgagtagtgaacagccagaaggacctccitggagcagaagcggggccaggtaggacaaTtagctgcagac  
acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 5 7) ;

DRB3\*0214 :

cacgtttcttgagctgcttaagctgagtgctatttcttcaatgggacggagcgggtgcggttccitggagagaca  
cttccataaaccaggaggagtagCgcgcttcgacagcgacgtgggggagtagccggcggtgagggagctggggcgg  
25 cctgatgccgagtagtgaacagccagaaggacctccitggagcagaagcggggccaggtaggacaaTtagctgcagac  
acaactacggggttgCtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 5 8) ;

DRB3\*0215 :

cacgtttcttggagctgcttaagtcgagtgctatcttcaatgggacggagcgggtgcggttccctggagagaCa  
cttccataaccaggaggagtagcGcgcttcgacagcgacgtgggggagtagcgggcggtagGggagctggggcgg  
ccctgagccgagtagtggaaacagccagaaggaccttctggagcagaagcggggccAggtggacacctactgcagac  
acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 5 9) ;

5 DRB3\*0216 :

cacgtttcttggagctgcttaagtcgagtgctatcttcaatgggacggagcgggtgcggttccctggagagaca  
cttccataaccaggaggagtagcGcgcttcgacagcgacgtgggggagtagcgggcggtagGggagctggggcgg  
ccctgctgggagCactggaaacagccagaaggaccttctggagcagaagcggggccaggtaggacaaTtactgcagac  
acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 6 0) ;

10 DRB3\*0217 :

cacgtttcttggagctgcttaagtcgagtgctatcttcaatgggacggagcgggtgcggttccctggagagaca  
cttccataaccaggaggagtagcGcgcttcgacagcgacgtgggggagtagcgggcggtagGggagctggggcgg  
ccctgagccgagtagtggaaacagccagaaggaccttctggagcagaagcggggccaggtaggacaaTtactgcagac  
acaactacggggttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 6 1) ;

15 DRB3\*030101 :

ggggacacccgaccacgtttcttggagctgcttaagtcgagtgctatcttcaatgggacggagcgggtgcggt  
tccctggagagatcttccataaccaggaggagtagctgcgcttcgacagcgacgtgggggagtagcgggcggtag  
ggagctggggcggccctgctgagtagCctggaaacagccagaaggaccttctggagcagaagcggggccaggtaggac  
aaTtactgcagacacaactacggggttggtGgagagcttcacagtcagcggcgag (SEQ ID NO: 3 6 2) ;

20 DRB3\*030102 :

cacgtttcttggagctgcttaagtcgagtgctatcttcaatgggacggagcgggtgcggttccctggagagata  
cttccataaccaggaggagtagctgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg  
ccctgctgagtagtccctggaaacagccagaaggaccttctggagcagaagcggggccaggtaggacaaTtactgcagac  
acaactacggCgttggtgagagcttcacagtcagcggcgag (SEQ ID NO: 3 6 3) ;

25 DRB3\*0302 :

cacgtttcttggagctgcttaagtcgagtgctatcttcaatgggacggagcgggtgcggttccctggagagaCa  
cttccataaccaggaggagtagctgcgcttcgacagcgacgtgggggagtagcgggcggtagcggagctggggcgg

ccctgctgccgagtcctgggaacagccagaaggaccctcctggagcagaagcggggccaggctggacaaTtactgcagac  
acaactacggggttgtGg (SEQ ID NO: 3 6 4) ;

DRB3\*0303 :

tttcttggagctgcttaagctlgagtgctcatttcttcaatgggacggagcgggtgcggttccctggaGagatacttc  
5 cataaccaggaggagTcgtgcgcttcgacagcgacgtgggggaglacgggcggtagcgagctggggcggcctg  
tCgccgagtcctgggaacagccagaaggaccctcctggagcagaagcggggccGggtggacaaTtactgcagacaaa  
ctacggggttggtgagagcttcaca (SEQ ID NO: 3 6 5) ;

DRB4\*010101 :

atgggtgtgtcgaagctccctggaggctccctgtaaggcagcgctgacagtgacattgaCgggtgtgagctccccac  
10 tggcttggctggggacaccaaccacgtttcttggagcaggctaagtgtgagtgctcatttcttcaatgggacgga  
gcgagtggtgaacctgatcagatacatctataaccaagaggaglacgcgcgtacaacagtgacctgggggagtlac  
caggcggtagcgagctggggcggcctgacgtgagtlactggaacagccagaaggaccctcctggagcggaggcggg  
ccgaggtagcacctactgcagatacaactacggggtgtggagagcttcacagtcagcggcgag (SEQ ID  
NO: 3 6 6) ;

15 DRB4\*0102 :

gagcgagtggtgaacctgatcagatacatctataaccaagaggaglacgcgcgtacaacagtgacctgggggagtl  
accaggcggtagcgagctggggcggcctgacgtgagtlactggaacagccagaaggaccctcctggagcggaggcg  
ggccgaggtagGcacctactgcagatacaactacggggtgtggagagcttcacagtcagcggcgag (SEQ ID  
NO: 3 6 7) ;

20 DRB4\*010302 :

ggggacaccaaccacgtttcttggagcaggctaagtgtgagtgctcatttcttcaatgggacggagcgagtggtga  
aCctgatcagatacatctataaccaagaggaglacgcgcgtacaacagtgacctgggggagtlaccaggcggtagc  
ggagctggggcggcctgacgtgagtlactggaacagccagaaggaccctcctggagcggaggcggccgaggtaggac  
acctactgcagaTacaactacggggtgtggagagcttcacagtcagcggcgag (SEQ ID NO: 3 6 8) ;

25 DRB4\*010303 :

atgggtgtgtcgaagctccctggaggctccctgtaaggcagcgctgacagtgacattgaCgggtgtgagctccccac  
tggcttggctggggacaccaaccacgtttcttggagcaggctaagtgtgagtgctcatttcttcaatgggacgga

gcgagtggtggaacctgaltcagatatactataaccaagaggagtagcgcgctacaacagtagctgggggagtag  
caggcggtagcggagctggggcgccctgacgctgagtagtaggaacagccagaaggacctccctggagcggaggcggg  
ccgaggtggacacctatgtagatataactacggggtgtggagagcttcacagtcagcggcgag (SEQ ID  
NO: 369) ;

5 DRB4\*010304 :

cacgtttcttggagcaggctaaagtgtgagtgctatttccctcaatgggacggagcgagtggtggaacctgaltcagata  
catctataaccaagaggagtagcgcgctacaacagtagcttgggggagtagcaggcggtagcggagctggggcgg  
ccctgacgctgagtagctggaacagccagaaggacctccctggagcggaggcggccgaggtggacacctactgcagat  
acaactacggggtgtggagagcttcacagtcagcggcgag (SEQ ID NO: 370) ;

10 DRB4\*0104 :

cacgtttcttggagcaggctaaagtgtgagtgctatttccctcaatgggacggagcgagtggtggaacctgaltcagata  
catctataaccaagaggagtagcgcgctacaacagtagcttgggggagtagcaggcggtagcggagctggggcgg  
ccctgacgctgagtagctggaacagccagaaggacctccctggagcggaggcggccgaggtggacacctactgcagat  
acaactacggggtgtggagagcttcacagtcagcggcgag (SEQ ID NO: 371) ;

15 DRB4\*0105 :

tggagcaggctaaagtgtgagtgctatttccctcaatgggacggagcgagtggtggaacctgaltcagata  
accaagaggagtagcgcgctacaacagtagcttgggggagtagcaggcggtagcggagctggggcggccctgacgc  
tagtagctggaacagccagaaggacctccctggagcggaggcggccgaggtggacacctactgcagacacaactac  
ggggtgtggagag (SEQ ID NO: 372) ;

20 DRB4\*0106 :

cacgtttcttggagcaggctaaagtgtgagtgctatttccctcaatgggacggagcgagtggtggaacctgaltcagata  
catctataaccaagaggagtagcgcgctacaacagtagcttgggggagtagcaggcggtagcggagctggggcgg  
ccctgacgctgagtagctggaacagccagaaggacctccctggagcggaggcggccgaggtggacacctactgcagat  
acaactacggggtgtggagagcttcacagtcagcggcgag (SEQ ID NO: 373) ;

25 DRB4\*0201N :

ggtagctgagctccccactggcttggctggggacacccAaccacgtttcttggagcaggctaaagtgtgagtgct  
ttccctcaatgggacggagcctgaltcagatatactataaccaagaggagtagcgcgctacaacagtagctggg

gaglacaggcggtagcggagctggggcgccagcgtgagtagtactggaacagccagaaggacctccaggagcgga  
ggcgggccgaggtagcacctactgcagatacaactacggggttgtGgagagcttcacagtgcagcggcgag (SEQ  
ID NO: 374) ;

DRB5\*010101 :

5 atggigtgtcgaagctcccaggagttcctacatggcaaAgctgacagtgcacatgtaggtgtgagctccccac  
tggctttggctggggacacccgaccacgtttcttgcagcaggataagtagtagtgcattttcttcaacgggacgga  
gcgggtgcggttccgtgcacagagacalcataaccaagaggaggacttgcgttcgacagcgacgtgggggagtag  
cgggcggtagcggagctggggcgccagcgtgagtagtactggaacagccagaaggacctccaggaaacagggcgcg  
ccgcggtagcacctactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag (SEQ ID  
10 NO: 375) ;

DRB5\*010102 :

cacgtttcttgcagcaggataagtagtagtgcattttcttcaacgggacggagcgggtgcggttccgtgcacagaga  
calcatalaaccaagaggaggacttgcgttcgacagcgacgtgggggagtagccgggcggtagcggagctggggcgg  
ccgtgacgtgagtagtactggaacagccagaaggacttccaggaaGacaggcggccgcggtagcacctactgcagac  
15 acaactacggggttggtgagagcttcaca (SEQ ID NO: 376) ;

DRB5\*0102 :

ggggacacccgaccacgtttcttgcagcaggataagtagtagtgcattttcttcaacgggacggagcgggtgcggt  
tccgtgcacagaggcatcatalaaccaagaggagAacgtgcgttcgacagcgacgtgggggagtagccgggcggtagc  
ggagctggggcgccgtgacgtgagtagtactggaacagccagaaggacttccaggaaGacaggcgcggcgggtagc  
20 acctactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag (SEQ ID NO: 377) ;  
DRB5\*0103 ;

ttgcagcaggataagtagtagtgcattttcttcaacgggacggagcgggtgcggttccgtgcacagaGgcatcatala  
accaagaggagaacgtgcgttcgacagcgacgtgggggagtagccgggcggtagcggagctggggcgccgtgacgc  
tagtagtactggaacagccagaaggacttccaggaaGacaggcgcggcgggtagcacctactgcagacacaactac  
25 ggggttggtgagagcttcacag (SEQ ID NO: 378) ;

DRB5\*0104 :

ggggacacccgaccacgtttcttgcagcaggataagtagtagtgcattttcttcaacgggacggagcgggtgcggt



tccigcacagagacaatataaccaagaggaggacTtgcgcltcgacagcgacgtgggggaglacggggcggtgac  
ggagctggggcgccigacgctgagctaciggaacagccagaaggacTtcciggaagacaggcgggcccTggtggac  
acctactgcagacacaactacggggtggtagagcttcacagtgcagcgcgag (SEQ ID NO: 379) ;  
DRB5\*0105 :

5 ccacgtttcttgcagcaggataagtaagtagtgicatttcttcaacgggacggagcgggtgcggttccigcacagag  
acaatataaccaagaggagGacgtgcgcltcgacagcgacgtgggggaglacggggcggtgacggagctggggcg  
gacctgacgctgagctaciggaacagccagaaggacTtcciggaGacaggcgGccgcgggtggacacctactgcaga  
cacaactacggggtggtagagcttcacagtgcagcg (SEQ ID NO: 380) ;  
DRB5\*0106 :

10 cactttcttgcagcaggataagtaagtagtgicatttcttcaacgggacggagcgggtgcggttccigcacagaga  
caatataaccaagaggaggacTtgcgcltcgacagcgacgtgggggaglacggggcggtgacggagctggggcg  
ccigacgctgagctaciggaacagccagaaggacTtcciggaGacaggcgGccgcgggtggacacctactgcagac  
acaactacggggctgtGgagagcttcacagtgcagcgga (SEQ ID NO: 381) ;  
DRB5\*0107 :

15 cactttcttgcagcaggataagtaagtagtgicatttcttcaacgggacggagcgggtgcggttccigcacagaga  
caatataaccaagaggaggacTtgcgcltcgacagcgacgtgggggaglacggggcggtgacggagctggggcg  
ccigacgctgagctaciggaacagccagaaggacTtcciggaGacaggcgGccgcgggtggacacctactgcagac  
acaactacggggtgtg (SEQ ID NO: 382) ;  
DRB5\*0109 :

20 cactttcttgcagcaggataagtaagtagtgicatttcttcaacgggacggagcgggtgcggttccigcacagaga  
caatataaccaagaggaggacttgcgcltcgacagcgacgtgggggaglacggggcggtgacggagctggggcg  
ccigacgctgagctaciggaacagccagaaggacttcciggaAacaggcgGccgcgggtggacacctactgcagac  
acaactacggggtgtg (SEQ ID NO: 383) ;  
DRB5\*0110N :

25 cactttcttgcagcaggataagtaagtagtgicatttcttcaacgggacggagcgggtgcggttccigcacagaGg  
caatataaccaagaggagAacgtgcgcltcgacagcgacgtgggggaglacggggcggtgacggagctggggcg  
ccigacgctgagctaciggaacagccagaaggacTtcciggaGacaggcgGccgcgggtggacacctactgca...c

acaactacggggtlggtagagcttcacagtcagcggcgag (SEQ ID NO: 384) ;

DRB5\*0111 :

cacgtlcttcagcaggataaglatgagtgatcttcttcaacgggacggagcgggtgcggtlcttcacagaga  
catctataaccaagaggaggacTtgcgttcgacagcgacgtgggggaglacgggaggacgggacggg  
5 cctgacgtgagtlactggaacagccagaaggacatcctggagcaggGcgggccgaggtagacacctactgcagac  
acaactacggggtlggtagagcttcacagtcagcggcgag (SEQ ID NO: 385) ;

DRB5\*0112 :

cacgtlcttcagcaggataaglatgagtgatcttcttcaacgggacggagcgggtgcggtlcttcacagaga  
catctataaccaagaggaggacTtgcgttcgacagcgacgtgggggaglacgggaggacgggacggg  
10 cctgacgccgagtcctggaacagccagaaggacatcctggagcGgaggcgggcccaggtagacaccgtGtgcagac  
acaactacggggtlggtagagcttcacagtcagcggcgag (SEQ ID NO: 386) ;

DRB5\*0202 :

atgggtgtgtcgaagctccctggaggctcctAcatggcagtgctgacagtgacacatgagggtgagctccccac  
tggcttggctggggacaccgaccaatgttcttcagcaggataaglatgagtgatcttcttcaacgggacgga  
15 gcgggtgcggtlcttcacagaggcatctataaccaagaggagaacgtgcgttcgacagcgacgtgggggaglac  
cgggaggacgggacgggacgggacgggacgggacgggacgggacgggacgggacgggacgggacggg  
ccgaggtagacacctactgcagacacaactacggggctgtGgagagcttcacagtcagcggcgag (SEQ ID  
NO: 387) ;

DRB5\*0203 :

20 tttcttcagcaggataaglatgagtgatcttcttcaacgggacggagcgggtgcggtlcttcacagaGgcac  
tataaccaagaggagAacgtgcgttcgacagcgacgtgggggaglacgggaggacgggacgggacgggacggg  
acgtgagtlactggaacagccagaaggacAtcctggagcagGcgggccgaggtagacacctactgcagacaaa  
ctacggggtlggtagagcttcacagtcagcgg (SEQ ID NO: 388) ;

DRB5\*0204 :

25 catgtlcttcagcaggataaglatgagtgatcttcttcaacgggacggagcgggtgcggtlcttcacagaGg  
catctataaccaagaggagaacgtgcgttcgacagcgacgtgggggaglacgggaggacgggacgggacggg  
cctgacgtgagtlactggaacagccagaaggacTtctggagcaggGcgggccgaggtagacacctactgcagac

acaactacggggcigtGgagagcttcaca (SEQ ID NO: 3 8 9) ;

DRB5\*0205 :

catgtttcttgcagcaggataagtaagagtgatcttcttcaacgggacggagcgggtgcggttctgcacagaGg

caictataaccaagaggagAacgtgcgttgcacagcgacgtgggggagtagcgggcggtagcggagcggggcgg

5 cctgacgtgagtagtggaacagccagaaggacctccgtggagcagaggcgggccgggtggacacctacgtgcagac

acaactacggggcigtGgagagcttcacagtcagcggcgag (SEQ ID NO: 3 9 0)

In the following, Probe List DR1 and 2 are  
shown in Tables 21-1 to 21-8 and Tables 22-1 to 22-7  
10 respectively. Allele-Probe Lists 1 and 2 are shown  
in Tables 23-1 to 23-13 and Tables 24-1 to 24-13  
respectively.

Table 21-1

Probe No.	Base Sequence
0	g gtg cgg ttg ctg gaA ( SEQ ID No: 391)
1	g cgg ttg ctg gaa aga T ( SEQ ID No: 392)
2	c tat aac caa gag gag tC ( SEQ ID No: 393)
3	ctg ggg cgg cct gaT ( SEQ ID No: 394)
4	ggg cgg cct gat gcC ( SEQ ID No: 395)
5	cac aac tac ggg gtt gG ( SEQ ID No: 396)
6	c atc tat aac caa gag gaA ( SEQ ID No: 397)
7	c gcg gtg gac acc taT ( SEQ ID No: 398)
8	ga cac aac tac ggg gC ( SEQ ID No: 399)
9	ag agg cgg gcc gcC ( SEQ ID No: 400)
10	g aac agc cag aag gac A ( SEQ ID No: 401)
11	g gac atc ctg gaa gac G ( SEQ ID No: 402)
12	gac atc ctg gaa gac gA ( SEQ ID No: 403)
13	g gcc gcg gtg gac aaT ( SEQ ID No: 404)
14	ac aac tac ggg gtt gtG ( SEQ ID No: 405)
15	c ttc gac agc gac gtg A ( SEQ ID No: 406)
16	c ctc ctg gag cag gC ( SEQ ID No: 407)
17	ca cgt ttc ttg tgg G ( SEQ ID No: 408)
18	tc tat aac caa gag gag tA ( SEQ ID No: 409)
19	gac ctc ctg gag cag G ( SEQ ID No: 410)
20	gac ctc ctg gag cag aA ( SEQ ID No: 411)
21	g gag cgg gtg cgg tA ( SEQ ID No: 412)
22	c ctg gac aga tac ttc C ( SEQ ID No: 413)
23	c cat aac cag gag gag A ( SEQ ID No: 414)
24	c cat aac cag gag gag aA ( SEQ ID No: 415)
25	gc gac gtg ggg gag tT ( SEQ ID No: 416)
26	g cag aag cgg ggc cG ( SEQ ID No: 417)
27	g ggc cgg gtg gac aA ( SEQ ID No: 418)
28	g ggc cgg gtg gac aaT ( SEQ ID No: 419)
29	ca cgt ttc ttg gA ( SEQ ID No: 420)
30	g gtg cgg ttc ctg gaG ( SEQ ID No: 421)

Table 21-2

Probe No.	Base Sequence
31	c ctg gag aga tac ttc C ( SEQ ID No: 4 2 2)
32	c aga tac ttc cat aac caG ( SEQ ID No: 4 2 3)
33	tt ggt gag agc ttc acG ( SEQ ID No: 4 2 4)
34	g gtg cgg tac ctg gaC ( SEQ ID No: 4 2 5)
35	g ggg cgg cct gat gA ( SEQ ID No: 4 2 6)
36	ggg cgg cct gat gaG ( SEQ ID No: 4 2 7)
37	c aga tac ttc cat aac cG ( SEQ ID No: 4 2 8)
38	ctg ggg cgg cct gC ( SEQ ID No: 4 2 9)
39	ag cag aag cgg ggc C ( SEQ ID No: 4 3 0)
40	g cag aag cgg ggc cA ( SEQ ID No: 4 3 1)
41	gg ggc cag gtg gac aA ( SEQ ID No: 4 3 2)
42	ctg ggg cgg cct agC ( SEQ ID No: 4 3 3)
43	gg cct gat gcc gag tC ( SEQ ID No: 4 3 4)
44	gac gtg ggg gag ttc T ( SEQ ID No: 4 3 5)
45	gt ttc ttg gag tac tct aC ( SEQ ID No: 4 3 6)
46	g gtg cgg ttc ctg gaC ( SEQ ID No: 4 3 7)
47	g tac cgg gcg gtg aG ( SEQ ID No: 4 3 8)
48	g ggc cag gtg gac aaT ( SEQ ID No: 4 3 9)
49	ttc gac agc gac gtg C ( SEQ ID No: 4 4 0)
50	c cat aac cag gag gag tT ( SEQ ID No: 4 4 1)
51	c ctg gac aga tac ttc G ( SEQ ID No: 4 4 2)
52	c cat aac cag gag gag tA ( SEQ ID No: 4 4 3)
53	atg gtg tgt ctg aag T ( SEQ ID No: 4 4 4)
54	ga tac ttc tat cac caa gaA ( SEQ ID No: 4 4 5)
55	tc ttg gag cag gtt aaa C ( SEQ ID No: 4 4 6)
56	c tat cac caa gag gag tA ( SEQ ID No: 4 4 7)
57	g cag agg-cgg-gcc-gA ( SEQ ID No: 4 4 8)
58	ggg cgg cct gac gcT ( SEQ ID No: 4 4 9)
59	c ttg gag cag gtt aaa cA ( SEQ ID No: 4 5 0)
60	ctg gac aga tac ttc tat C ( SEQ ID No: 4 5 1)

Table 21-3

Probe No.	Base Sequence
61	g ctg ggg cgg cct aG ( SEQ ID No: 452)
62	a gag gag tac glg cgC ( SEQ ID No: 453)
63	gc ttc aca glg cag cgA ( SEQ ID No: 454)
64	c ctc ctg gag cag agA ( SEQ ID No: 455)
65	t ttc ttg gag cag gtt aaA ( SEQ ID No: 456)
66	a gac agg cgg gcc cT ( SEQ ID No: 457)
67	g aac agc cag aag gac T ( SEQ ID No: 458)
68	ag gac ttc ctg gaa gaC ( SEQ ID No: 459)
69	gg cgg cct gat gcc C ( SEQ ID No: 460)
70	c ggg gtt gtg gag agA ( SEQ ID No: 461)
71	g gac ctc ctg gag cG ( SEQ ID No: 462)
72	ctg ggg cgg cct gat A ( SEQ ID No: 463)
73	ag tac cgg gcg gtg aT ( SEQ ID No: 464)
74	g ggg gag tac cgg gT ( SEQ ID No: 465)
75	g cag agg cgg gcc C ( SEQ ID No: 466)
76	g cag agg cgg gcc cT ( SEQ ID No: 467)
77	tc ctg gag cag agg cA ( SEQ ID No: 468)
78	caa gag gag tac gtg cA ( SEQ ID No: 469)
79	c ttg gag cag gtt aaa cC ( SEQ ID No: 470)
80	gac ctc ctg gaa gac G ( SEQ ID No: 471)
81	gac ctc ctg gaa gac gA ( SEQ ID No: 472)
82	gac atc ctg gag cag aA ( SEQ ID No: 473)
83	agc gac gtg ggg gaC ( SEQ ID No: 474)
84	g ggg cgg cct gat gG ( SEQ ID No: 475)
85	tc tat cac caa gag gag A ( SEQ ID No: 476)
86	c tat cac caa gag gag aA ( SEQ ID No: 477)
87	g gct ggg gac acc cA ( SEQ ID No: 478)
88	g gac agg cgg ggc C ( SEQ ID No: 479)
89	c cag gtg gac acc gtG ( SEQ ID No: 480)
90	tc ctg tgg cag ggt aaA ( SEQ ID No: 481)

Table 21-4

Probe No.	Base Sequence
91	g gcg gtg acg gag cta ( SEQ ID No: 482)
92	g cct gtc gcc gag tc ( SEQ ID No: 483)
93	gtg cag ttc ctg gaa agT ( SEQ ID No: 484)
94	ag tcc tgg aac agc cG ( SEQ ID No: 485)
95	gg cgg cct gct gcG ( SEQ ID No: 486)
96	gtg acg gag cta ggg T ( SEQ ID No: 487)
97	c tct acg ggt gag lgt T ( SEQ ID No: 488)
98	cgg ttc ctg gac aga taT ( SEQ ID No: 489)
99	gc tcc tgc atg gca gT ( SEQ ID No: 490)
100	g tac cgg gcg gtg acA ( SEQ ID No: 491)
101	cac aac tac ggg gtt gT ( SEQ ID No: 492)
102	gtt gtt gag agc ttc acG ( SEQ ID No: 493)
103	tt gtg gag agc ttc acG ( SEQ ID No: 494)
104	g ctg ggg cgg cct gT ( SEQ ID No: 495)
105	gg cct gct gcg gag C ( SEQ ID No: 496)
106	gt ttc ttg gag tac tct aG ( SEQ ID No: 497)
107	gg cct gat gcg gag C ( SEQ ID No: 498)
108	tc tat aac caa gag gag G ( SEQ ID No: 499)
109	ag gac atc ctg gaa gaC ( SEQ ID No: 500)
110	g ctg ggg cgg cct aT ( SEQ ID No: 501)
111	c ttg gag tac tct acg tC ( SEQ ID No: 502)
112	gt ttc ttg gag tac tct aT ( SEQ ID No: 503)
113	c aac tac ggg gct gtG ( SEQ ID No: 504)
114	ct gtg gag agc ttc acG ( SEQ ID No: 505)
115	g agc ttc aca gtg cag A ( SEQ ID No: 506)
116	ctg gag cgg agg cgT ( SEQ ID No: 507)
117	g ttg ctg gaa aga cgc G ( SEQ ID No: 508)
118	ctg gag cgg agg cgC ( SEQ ID No: 509)
119	g aag gac ttc ctg gaa G ( SEQ ID No: 510)
120	c ctg gaa gac agg cgC ( SEQ ID No: 511)

Table 21-5

Probe No.	Base Sequence
121	t gag tgt cat ttc ttc aaC ( SEQ ID No: 512 )
122	gac ttc ctg gaa gac gA ( SEQ ID No: 513 )
123	c ttg gag tac tct acg G ( SEQ ID No: 514 )
124	g gac ctc ctg gaa gaC ( SEQ ID No: 515 )
125	g gac ttc ctg gaa gac G ( SEQ ID No: 516 )
126	tc tat aac caa gag gag tT ( SEQ ID No: 517 )
127	c aga tac ttc tat aac caG ( SEQ ID No: 518 )
128	c tat aac cag gag gag tT ( SEQ ID No: 519 )
129	at aac caa gag gag gac T ( SEQ ID No: 520 )
130	cgg agg cgg gcc gA ( SEQ ID No: 521 )
131	cc gag gtg gac acc taT ( SEQ ID No: 522 )
132	aa gac agg cgg gcc C ( SEQ ID No: 523 )
133	ttg gag tac tct acg tC ( SEQ ID No: 524 )
134	gag tac tct acg tct gaG ( SEQ ID No: 525 )
135	cag aag gac ttc ctg gaA ( SEQ ID No: 526 )
136	g gcc gcg gtg gac aA ( SEQ ID No: 527 )
137	ttc tal aac caa gag gag A ( SEQ ID No: 528 )
138	tc tat aac caa gag gag aA ( SEQ ID No: 529 )
139	ca cgt ttc ttg gag cT ( SEQ ID No: 530 )
140	cgg cct gat gag gag C ( SEQ ID No: 531 )
141	a gac agg cgg gcc gT ( SEQ ID No: 532 )
142	g cgg cct gat gag gaC ( SEQ ID No: 533 )
143	g cgg cct gat gag gC ( SEQ ID No: 534 )
144	g ttc cgg gcg gtg aG ( SEQ ID No: 535 )
145	gc tcc tgc atg gca gtT ( SEQ ID No: 536 )
146	ttg gct ggg gac acc A ( SEQ ID No: 537 )
147	g gag cgg gtg cgg ttA ( SEQ ID No: 538 )
148	c cat aac cag gag gag C ( SEQ ID No: 539 )
149	cag aag gac atc ctg gC ( SEQ ID No: 540 )
150	gag cgg gtg cgg ttC ( SEQ ID No: 541 )



Table 21-6

Probe No.	Base Sequence
151	g gaa gac gag cgg gcT ( SEQ ID No: 542 )
152	c ctg gaa gac gag cgC ( SEQ ID No: 543 )
153	g gac atc ctg gaa gac aA ( SEQ ID No: 544 )
154	a cgt ttc ttg gag tac tC ( SEQ ID No: 545 )
155	gg ttc ctg gac aga tac T ( SEQ ID No: 546 )
156	ac atc ctg gag cag gC ( SEQ ID No: 547 )
157	cac aac tac ggg gtt gA ( SEQ ID No: 548 )
158	g aga tac ttc cat aac caG ( SEQ ID No: 549 )
159	c tgc aga cac aac tac C ( SEQ ID No: 550 )
160	t aac cag gag gag aac C ( SEQ ID No: 551 )
161	ac gtg ggg gag ttc cT ( SEQ ID No: 552 )
162	ctg ggg cgg cct gtC ( SEQ ID No: 553 )
163	gg gag ttc cgg gcg T ( SEQ ID No: 554 )
164	ca cgt ttc ttg gag tac T ( SEQ ID No: 555 )
165	tct acg tct gag tgt caA ( SEQ ID No: 556 )
166	ggg cgg cct gat gcT ( SEQ ID No: 557 )
167	t ttc ttg gag tac tct aC ( SEQ ID No: 558 )
168	gac atc ctg gag cag G ( SEQ ID No: 559 )
169	g acg gag cgg gtg cA ( SEQ ID No: 560 )
170	g gcc gag gtg gac aaT ( SEQ ID No: 561 )
171	ttg gag tac cct acg tC ( SEQ ID No: 562 )
172	t aac cag gag gag ttc C ( SEQ ID No: 563 )
173	gg gcc gag gtg gac G ( SEQ ID No: 564 )
174	c tcc cca ctg gct ttg T ( SEQ ID No: 565 )
175	gc aga cac aac tac ggA ( SEQ ID No: 566 )
176	cac aac tac gga gtt gtG ( SEQ ID No: 567 )
177	g tgg cag cct aag agG ( SEQ ID No: 568 )
178	tg gac aga tac ttc tat aaT ( SEQ ID No: 569 )
179	cgg ttc ctg gac aga C ( SEQ ID No: 570 )
180	ac ttc ctg gag cag gC ( SEQ ID No: 571 )

Table 21-7

Probe No.	Base Sequence
181	g gag ttc cgg gcg gC ( SEQ ID No: 572)
182	c tgg aac agc cag aag A ( SEQ ID No: 573)
183	ac gtg ggg gag ttc cA ( SEQ ID No: 574)
184	c tgg aac agc ca ggg gac A ( SEQ ID No: 575)
185	tc ctg gaa gac agg gC ( SEQ ID No: 576)
186	g cgg glg cgg ttc cC ( SEQ ID No: 577)
187	c tat aac cag gag gag aA ( SEQ ID No: 578)
188	cgt ttc ttg gag ctg cG ( SEQ ID No: 579)
189	c tcc cga ctg gct ttc ( SEQ ID No: 580)
190	ca cgt ttc ttg gag ctg T ( SEQ ID No: 581)
191	cgt ttc ttg gag ctg TG ( SEQ ID No: 582)
192	g gtg cgg tac ctg gaG ( SEQ ID No: 583)
193	gt ttc tcg gag ctg cG ( SEQ ID No: 584)
194	cgg glg cgg tac ctg A ( SEQ ID No: 585)
195	ac cag gag gag tac gC ( SEQ ID No: 586)
196	c cag gag gag ttc ctg A ( SEQ ID No: 587)
197	ca cgt ttc ttg G ( SEQ ID No: 588)
198	cgg ttc ctg gag aga C ( SEQ ID No: 589)
199	gtg gac aat tac tgc agG ( SEQ ID No: 590)
200	ggg cgg cct gat gcG ( SEQ ID No: 591)
201	aga cac ttc cat aac caG ( SEQ ID No: 592)
202	ac cag gag gag aac gC ( SEQ ID No: 593)
203	g gag cgg gtg cgg C ( SEQ ID No: 594)
204	cac aac tac ggg glf gC ( SEQ ID No: 595)
205	gc aga cac aac tac ggC ( SEQ ID No: 596)
206	g ctg aca gtg aca ttg aC ( SEQ ID No: 597)
207	cgg gcc gag gtg gG ( SEQ ID No: 598)
208	ag tgt gag tgt cat ttc C ( SEQ ID No: 599)
209	g gag cga gtg tgg aaC ( SEQ ID No: 600)
210	g gac acc tac tgc aga T ( SEQ ID No: 601)

Table 21-8

Probe No.	Base Sequence
211	cg cgc tac aac agt gaT ( SEQ ID No: 602)
212	gg gcc gag gtg gac aA ( SEQ ID No: 603)
213	tg gac aac tac tgc aga T ( SEQ ID No: 604)
214	acg gag cga gtg tgg A ( SEQ ID No: 605)
215	a ggt tcc tac atg gca aA ( SEQ ID No: 606)
216	ca cgt ttc ttg C ( SEQ ID No: 607)
217	atc tat aac caa gag gag A ( SEQ ID No: 608)
218	cgg ttc ctg cac aga G ( SEQ ID No: 609)
219	gac ttc ctg gaa gac aC ( SEQ ID No: 610)
220	c ctg gaa gac acg cgC ( SEQ ID No: 611)
221	g aag gac atc ctg gaa G ( SEQ ID No: 612)
222	ag aag gac ttc ctg gaa A ( SEQ ID No: 613)
223	g cct gac gcc gag tC ( SEQ ID No: 614)
224	ag gac ttc ctg gag cG ( SEQ ID No: 615)
225	c gag gtg gac acc gtG ( SEQ ID No: 616)
226	ctc cct gga ggt tcc tA ( SEQ ID No: 617)

Table 22-1

Probe No.	Base Sequence
0	g ttg ctg gaA aga tgc at ( SEQ ID No: 618)
1	ctg gaa aga Tgc atc tat a ( SEQ ID No: 619)
2	gag gag tCc gtg cgc ( SEQ ID No: 620)
3	cgg cct gaT gcc gag ( SEQ ID No: 621)
4	cct gal gcC gag tac lg ( SEQ ID No: 622)
5	c ggg gtt gGt gag agc ( SEQ ID No: 623)
6	caa gag gaA tcc gtg cg ( SEQ ID No: 624)
7	g gac acc taT tgc aga ca ( SEQ ID No: 625)
8	c tac ggg gCt gtg gag ( SEQ ID No: 626)
9	gg gcc gcC gtg gac ( SEQ ID No: 627)
10	cag aag gac Atc ctg gaa ( SEQ ID No: 628)
11	g gaa gac Gag cgg gc ( SEQ ID No: 629)
12	gaa gac gAg cgg gcc ( SEQ ID No: 630)
13	g gtg gac aaT tac tgc ag ( SEQ ID No: 631)
14	ggg gtt gTg gag agc t ( SEQ ID No: 632)
15	c gac gtg Agg gag tac ( SEQ ID No: 633)
16	gag cag gCg cgg gc ( SEQ ID No: 634)
17	ttc ttg tgg Gag ctt aag ( SEQ ID No: 635)
18	a gag gag tAc gtg cgc ( SEQ ID No: 636)
19	gag cag Gcg cgg gc ( SEQ ID No: 637)
20	gag cag aAg cgg gcc ( SEQ ID No: 638)
21	xc acc Aga c ( SEQ ID No: 639)
22	g gtg cgg tAc ctg gac ( SEQ ID No: 640)
23	g gtg gac aAc tac tgc a ( SEQ ID No: 641)
24	cgg ggc cGg gtg ga ( SEQ ID No: 642)
25	g ttc ctg gaG aga tac tt ( SEQ ID No: 643)
26	aga tac ttc Cat aac cag g ( SEQ ID No: 644)
27	g gag gag Aac gtg cgc ( SEQ ID No: 645)
28	g gag gag aAc gtg cgc ( SEQ ID No: 646)
29	cat aac caG gag gag tc ( SEQ ID No: 647)
30	ggg gag tTc cgg ggc ( SEQ ID No: 648)

Table 22-2

Probe No.	Base Sequence
31	agc ttc acG gtg cag c ( SEQ ID No: 649)
32	g tac ctg gaC aga tac tt ( SEQ ID No: 650)
33	g cct gat gAg gag tac t ( SEQ ID No: 651)
34	cct gat gaG gag tac tg ( SEQ ID No: 652)
35	c cat aac cGg gag gag ( SEQ ID No: 653)
36	cgg cct gCt gcc gag ( SEQ ID No: 654)
37	g cgg gcc Cag gtg ga ( SEQ ID No: 655)
38	cgg gcc cAg gtg gac ( SEQ ID No: 656)
39	cgg cct aGc gcc gag ( SEQ ID No: 657)
40	cgg cct agC gcc gag ( SEQ ID No: 658)
41	t gcc gag tCc tgg aac ( SEQ ID No: 659)
42	g gag ttc Tgg gcc gtg ( SEQ ID No: 660)
43	ag tac tct aCg tct gag t ( SEQ ID No: 661)
44	g ttc ctg gaC aga tac tt ( SEQ ID No: 662)
45	gcc gtg aGg gag ctg ( SEQ ID No: 663)
46	c gac gtg Cgg gag ttc ( SEQ ID No: 664)
47	ag aag gac Atc ctg gag ( SEQ ID No: 665)
48	g gag gag tTc gtg cgc ( SEQ ID No: 666)
49	aga tac ttc Gat aac cag g ( SEQ ID No: 667)
50	c cat aac caG gag gag ta ( SEQ ID No: 668)
51	g gag gag tAc gtg cgc ( SEQ ID No: 669)
52	gt ctg aag Ttc cct gga ( SEQ ID No: 670)
53	t cac caa gaA gag tac gt ( SEQ ID No: 671)
54	cag gtt aaa Cat gag tgt c ( SEQ ID No: 672)
55	cgg gcc gAg gtg gac ( SEQ ID No: 673)
56	cct gac gcT gag tac tg ( SEQ ID No: 674)
57	ag gtt aaa cAt gag tgt ca ( SEQ ID No: 675)
58	tac ttc tat Cac caa gag g ( SEQ ID No: 676)
59	tac gtg cgG ttc gac ag ( SEQ ID No: 677)
60	gag cag agA cgg gcc ( SEQ ID No: 678)

Table 22-3

Probe No.	Base Sequence
61	g cag gtt aaA cat gag tg ( SEQ ID No: 679)
62	cgg gcc cTg gtg gac ( SEQ ID No: 680)
63	cag aag gac Tlc ctg gaa ( SEQ ID No: 681)
64	ctg gaa gaC agg cgg g ( SEQ ID No: 682)
65	ct gat gcc Cag tac tgg ( SEQ ID No: 683)
66	t gtg gag agA ttc aca gt ( SEQ ID No: 684)
67	ctg gag cGg agg cgg ( SEQ ID No: 685)
68	g cgg gcc Ctg gtg ga ( SEQ ID No: 686)
69	gg cct gat Acc gag tac ( SEQ ID No: 687)
70	g gcg gtg aTg gag ctg ( SEQ ID No: 688)
71	g tac cgg gTg gtg acg ( SEQ ID No: 689)
72	cag agg cAg gcc gcg ( SEQ ID No: 690)
73	g tac gtg cAc ttc gac a ( SEQ ID No: 691)
74	cag gtt aaa Cct gag tgt ( SEQ ID No: 692)
75	ag gtt aaa cCt gag tgt c ( SEQ ID No: 693)
76	gtg ggg gaC tac cgg ( SEQ ID No: 694)
77	g cct gat gGc gag tac ( SEQ ID No: 695)
78	a gag gag Aac gtg cgc ( SEQ ID No: 696)
79	a gag gag aAc gtg cgc ( SEQ ID No: 697)
80	xacc cAa c ( SEQ ID No: 698)
81	gac acc gtG tgc aga c ( SEQ ID No: 699)
82	g cag ggt aaA tat aag tgt ( SEQ ID No: 700)
83	acg gag ctA ggg cgg ( SEQ ID No: 701)
84	c gcc gag tCc tgg aac ( SEQ ID No: 702)
85	c ctg gaa agT ctc ttc ta ( SEQ ID No: 703)
86	g aac agc cGg aag gac ( SEQ ID No: 704)
87	cct gct gcG gag tac t ( SEQ ID No: 705)
88	g cta ggg Tgg cct gtc ( SEQ ID No: 706)
89	ggt gag tgt Tat ttc ttc a ( SEQ ID No: 707)
90	tg gac aga taT ttc tat aac ( SEQ ID No: 708)

Table 22-4

Probe No.	Base Sequence
91	g tgt ctg aGg ctc cct ( SEQ ID No: 709)
92	gcg gtg acA gag ctg g ( SEQ ID No: 710)
93	c ggg gtt gTt gag agc ( SEQ ID No: 711)
94	cgg cct gTt gcc gag ( SEQ ID No: 712)
95	t gcg gag Cac tgg aac ( SEQ ID No: 713)
96	g tac tct aCg ggt gag t ( SEQ ID No: 714)
97	cgg cct gCt gcc gag ( SEQ ID No: 715)
98	g tac tct aCg ggt gag t ( SEQ ID No: 716)
99	a gag gag Gac gtg cgc ( SEQ ID No: 717)
100	cgg cct aTc gcc gag ( SEQ ID No: 718)
101	c tct acg tCt gag tgt c ( SEQ ID No: 719)
102	ag tac tct aTg ggt gag t ( SEQ ID No: 720)
103	ggg gct gTc gag agc ( SEQ ID No: 721)
104	gtg cgg taT ctg cac ag ( SEQ ID No: 722)
105	gg agg cgT gcc gcg ( SEQ ID No: 723)
106	gaa aga cgc Gtc cat aac ( SEQ ID No: 724)
107	gg agg cgC gcc gcg ( SEQ ID No: 725)
108	c ctg gaa Gac agg cgc ( SEQ ID No: 726)
109	ctg gaa gaC agg cgc g ( SEQ ID No: 727)
110	ac agg cgC gcc gcg ( SEQ ID No: 728)
111	ttc ttc aaC ggg acg ga ( SEQ ID No: 729)
112	ac tct acg Ggt gag tgt ( SEQ ID No: 730)
113	c cat aac caG gag gag aa ( SEQ ID No: 731)
114	c cat aac caG gag gag tt ( SEQ ID No: 732)
115	a gag gag tTc gtg cgc ( SEQ ID No: 733)
116	c tat aac caG gag gag tt ( SEQ ID No: 734)
117	g gag gac Ttg cgc ttc ( SEQ ID No: 735)
118	c ctg gaa Gac agg cgg ( SEQ ID No: 736)
119	t acg tct gaG tgt cat ttc ( SEQ ID No: 737)
120	ttc ctg gaA gac agg cg ( SEQ ID No: 738)

Table 22-5

Probe No.	Base Sequence
121	tc ttg gag cTg ctt aag t ( SEQ ID No: 739)
122	g cct gat gAg gag cac ( SEQ ID No: 740)
123	at gag gag Cac tgg aac ( SEQ ID No: 741)
124	cgg gcc gTg gtg gac ( SEQ ID No: 742)
125	t gat gag gaC tac tgg aa ( SEQ ID No: 743)
126	t gat gag gGg tac tgg a ( SEQ ID No: 744)
127	c atg gca gtT ctg aca gt ( SEQ ID No: 745)
128	gtg cgg ttA ctg gag ag ( SEQ ID No: 746)
129	g gag gag Ctc ctg cg ( SEQ ID No: 747)
130	c atc ctg gGa gac agg ( SEQ ID No: 748)
131	gtg cgg ttC ctg gag a ( SEQ ID No: 749)
132	gag cgg gcT gcg gtg ( SEQ ID No: 750)
133	gaa gac gAg cgc gcc ( SEQ ID No: 751)
134	ac gag cgC gcc gcg ( SEQ ID No: 752)
135	ctg gaa gaC aag cgg g ( SEQ ID No: 753)
136	g gaa gac aAg cgg gcc ( SEQ ID No: 754)
137	g gag tac tCl acg tct g ( SEQ ID No: 755)
138	gac aga tac Ttc tat aac c ( SEQ ID No: 756)
139	c ggg gtt gAt gag agc ( SEQ ID No: 757)
140	ac aac tac Cgg gtt gtg ( SEQ ID No: 758)
141	cgg cct gTc gcc gag ( SEQ ID No: 759)
142	g gag aac Ctg cgc ttc ( SEQ ID No: 760)
143	g gag ttc cTg gcg gtg ( SEQ ID No: 761)
144	cgg cct gtC gcc gag ( SEQ ID No: 762)
145	c cgg gcg Ttg acg ga ( SEQ ID No: 763)
146	ttg gag tac Tct acg tct ( SEQ ID No: 764)
147	ct gag tgt caA ttc ttc aat ( SEQ ID No: 765)
148	cct gat gcT gag tac tg ( SEQ ID No: 766)
149	gt ttc ttg gAg tac tct ac ( SEQ ID No: 767)
150	g cgg gtg cAg ttc ctg ( SEQ ID No: 768)



Table 22-6

Probe No.	Base Sequence
151	c gac gTg Cgg gag tac ( SEQ ID No: 769)
152	c cct acg tCt gag tgt c ( SEQ ID No: 770)
153	g gag gag tTc ctg cgc ( SEQ ID No: 771)
154	g gag tTc Ctg cgc ttc ( SEQ ID No: 772)
155	g gTg gac Gcc tat tgc ( SEQ ID No: 773)
156	g gct tTg Tct ggg gac ( SEQ ID No: 774)
157	c aac tac ggA gtt gTg ga ( SEQ ID No: 775)
158	gga gtt gTg gag agc tt ( SEQ ID No: 776)
159	cct aag agG gag tgt ca ( SEQ ID No: 777)
160	c ttc tat aaT cag gag gag ( SEQ ID No: 778)
161	ctg gac aga Cac ttc tat ( SEQ ID No: 779)
162	ag aag gac Ttc ctg gag ( SEQ ID No: 780)
163	cgg gcg gCg acg ga ( SEQ ID No: 781)
164	gc cag aag Aac atc ctg ( SEQ ID No: 782)
165	g gag tTc cAg gcg gTg ( SEQ ID No: 783)
166	caa gg gac ATc ctg gag c ( SEQ ID No: 784)
167	gac agg gCc gcc gc ( SEQ ID No: 785)
168	g cgg tTc cCg gac aga ( SEQ ID No: 786)
169	g gag ctg cGt aag tct g ( SEQ ID No: 787)
170	ctg gct tTc gct ggg g ( SEQ ID No: 788)
171	tTg gag ctg Tgt aag tct ( SEQ ID No: 789)
172	g gag ctg tGt aag tct g ( SEQ ID No: 790)
173	g tac ctg gaG aga tac tt ( SEQ ID No: 791)
174	cgg tac ctg Aac aga tac ( SEQ ID No: 792)
175	gag cag aAg cgg ggc ( SEQ ID No: 793)
176	g gag tac gCg cgc ttc ( SEQ ID No: 794)
177	ag ttc ctg Agc ttc gac ( SEQ ID No: 795)
178	cgt ttc tTg Gcg ctg ctt ( SEQ ID No: 796)
179	ctg gag aga Cac ttc cat ( SEQ ID No: 797)
180	t tac tgc agG cac aac ta ( SEQ ID No: 798)

Table 22-7

Probe No.	Base Sequence
181	cct gat gcG gag tac tg ( SEQ ID No: 799)
182	g gag gag Aac gcg cg ( SEQ ID No: 800)
183	g gag aac gCg cgc ttc ( SEQ ID No: 801)
184	cgt ttc ttg Cag ctg ctt ( SEQ ID No: 802)
185	g gtg cgg Ctc ctg ga ( SEQ ID No: 803)
186	c ggg gtt gCt gag agc ( SEQ ID No: 804)
187	aac tac ggC gtt gtg ga ( SEQ ID No: 805)
188	g aca ttg aCg gtg ctg a ( SEQ ID No: 806)
189	c gag gtg gGc acc tac ( SEQ ID No: 807)
190	gtg tgg aaC ctg atc ag ( SEQ ID No: 808)
191	g gac acc taT tgc aga ta ( SEQ ID No: 809)
192	aac agt gaT ctg ggg ga ( SEQ ID No: 810)
193	tac tgc aga Tac aac tac g ( SEQ ID No: 811)
194	tgt cat ttc Ctc aat ggg ( SEQ ID No: 812)
195	ga gtg tgg Aac ctg atc ( SEQ ID No: 813)
196	c atg gca aAg ctg aca g ( SEQ ID No: 814)
197	cgt ttc ttg Cag cag gat ( SEQ ID No: 815)
198	ctg cac aga Ggc atc tat ( SEQ ID No: 816)
199	gaa gac aCg cgc gcc ( SEQ ID No: 817)
200	ac acg cgC gcc gcg ( SEQ ID No: 818)
201	c ctg gaa Aac agg cgc ( SEQ ID No: 819)
202	a ggt tcc tAc atg gca g ( SEQ ID No: 820)
203	tgt ttc ttg Cag cag gat ( SEQ ID No: 821)

Table 23-1

Allele Number		Probe Number for Detection							
		2	3	4	5				
DRB1*010101	0								
DRB1*010102	6								
DRB1*010201	7	8							
DRB1*010202	9								
DRB1*0103	10	11	12						
DRB1*0104	13	14							
DRB1*0105	15								
DRB1*0106	16	14							
DRB1*0107	17								
DRB1*0108	18								
DRB1*0109	19	16							
DRB1*0110	20								
DRB1*030101	21	22	23	24	25	26	27	14	
DRB1*030102	26	28	14						
DRB1*030201	29	30	31	23	24	26	27		
DRB1*030202	30	23	24	26	28				
DRB1*0303	30	31	23	24	26	27	14		
DRB1*0304	21	22	32	25	26	27	14		
DRB1*030501	21	22	23	24	25	26	27		
DRB1*030502	27	33							
DRB1*0306	21	34	22	23	24	26	27	14	
DRB1*0307	22	23	24	25	26	27	14		
DRB1*0308	23	35	36	26	27	14			
DRB1*0309	37								
DRB1*0310	38	26	27	14					
DRB1*0311	21	39	40	41	14				
DRB1*0312	42	26	27	14					
DRB1*0313	43	26	27	14					
DRB1*0314	21	22	23	24	25	26			
DRB1*0315	21	22	23	24	25	26	14		

Table 23-2

Allele Number		Probe Number for Detection							
DRB1*0316	44								
DRB1*0317	45	46	18	47	48				
DRB1*0318	49	14							
DRB1*0319	10	26	27	14					
DRB1*0320	27	8							
DRB1*0321	50	25	26	27	14				
DRB1*0322	51								
DRB1*0323	37	14							
DRB1*0324	25	39	40	48	14				
DRB1*0325	21	22	32	52	25	26	27	14	
DRB1*040101	53	20							
DRB1*040102	54								
DRB1*0402	53	12	14						
DRB1*040301	55	56	57	14					
DRB1*040302	55	58	57	14					
DRB1*0404	53	14							
DRB1*040501	55	59	60	56	61				
DRB1*040502	62								
DRB1*040503	63								
DRB1*040504	60	42	33						
DRB1*0406	55	60	57	14					
DRB1*040701	55	56	57						
DRB1*040702	64								
DRB1*0408	65	55	59	60	56				
DRB1*0409	60	61	20						
DRB1*0410	60	56	61	14					
DRB1*0411	53	57	14						
DRB1*0412	60	61	10	66	14				
DRB1*0413	60	20	14						
DRB1*0414	60	10	11	12					

Table 23-3

Allele Number		Probe Number for Detection				
DRB1*0415	55	36	67	68	14	
DRB1*0416	69					
DRB1*0417	60	61	57			
DRB1*0418	60	10	66	14		
DRB1*0419	65	55	59	60		
DRB1*0420	60	57				
DRB1*0421	60	20				
DRB1*0422	60	56	26	27	14	
DRB1*0423	70					
DRB1*0424	61	42	71			
DRB1*0425	60	56	67	66	14	
DRB1*0426	72					
DRB1*0427	56	57	8			
DRB1*0428	60	56	25	61		
DRB1*0429	73					
DRB1*0430	74					
DRB1*0431	55	60	56	75	76	
DRB1*0432	77					
DRB1*0433	78					
DRB1*0434	55	79	56	20		
DRB1*0435	55	25	20			
DRB1*0436	55	67	68	14		
DRB1*0437	55	80	81	14		
DRB1*0438	55	10	82			
DRB1*0439	83					
DRB1*0440	84					
DRB1*0441	55	85	86	57	14	
DRB1*0442	55	25	14			
DRB1*0443	55	60	25			
DRB1*0444	60	56	13	14		

Table 23-4

Allele Number		Probe Number for Detection				
DRB1*070101	87	88	89			
DRB1*070102	90	91	92	89		
DRB1*0703	93					
DRB1*0704	91	48				
DRB1*0705	94					
DRB1*0706	91	95	89			
DRB1*0707	96					
DRB1*080101	97	42	67	66	33	
DRB1*080102	98					
DRB1*080201	99	33				
DRB1*080202	97	18	67	66		
DRB1*080203	100					
DRB1*080302	45	97	61	10	66	
DRB1*080401	97	18	67	66	14	
DRB1*080402	18	67	66	101		
DRB1*080403	66	101	102			
DRB1*080404	66	14	103			
DRB1*0805	97	61	67	68		
DRB1*0806	61	67	66	14		
DRB1*0807	104	67	66	33		
DRB1*0808	38	105	66			
DRB1*0809	45	50	67	66	33	
DRB1*0810	97	61	10	66	14	
DRB1*0811	38	66	33			
DRB1*0812	10	66	8			
DRB1*0813	97	18	66	33		
DRB1*0814	106					
DRB1*0815	107	10	66			
DRB1*0816	108	33				
DRB1*0817	25	61	67	66		

Table 23-5

Allele Number		Probe Number for Detection						
DRB1*0818	45	97	61	10	109			
DRB1*0819	110	10	66					
DRB1*0820	111	18	67	66	14			
DRB1*0821	112							
DRB1*0822	8	113	114					
DRB1*0823	15	66						
DRB1*0824	97	18	67	68				
DRB1*090102	92	115						
DRB1*0902	58	115						
DRB1*100101	116							
DRB1*100102	117	118						
DRB1*110101	99	36	67	68				
DRB1*110102	36	67	68	33				
DRB1*110103	36	67	119	68	120			
DRB1*110104	121	18	25	35	67	68		
DRB1*1102	35	10	11	12	14			
DRB1*1103	99	122	14					
DRB1*110401	99	67	68	14				
DRB1*110402	36	14	103					
DRB1*1105	123	35	36	67	68			
DRB1*110601	36	67	68	8				
DRB1*110602	36	67	68	7	8			
DRB1*1107	35	36	26	27	14			
DRB1*110801	18	25	35	124				
DRB1*110802	36	124	33					
DRB1*1109	32	23	24	25	35	67	68	
DRB1*1110	22	32	50	25	35	67	68	
DRB1*1111	25	35	67	125	122			
DRB1*111201	126	25	35	67	68			
DRB1*111202	111	127	128	25	35	67	68	

Table 23-6

Allele Number		Probe Number for Detection					
DRB1*1113	25	35	36	71	7	14	
DRB1*1114	35	10	11	12			
DRB1*1115	129	36	67	119	68		
DRB1*1116	23	35	10	11	12	14	
DRB1*1117	111	35	36	130	131	14	
DRB1*1118	18	35	10	109	14		
DRB1*1119	18	35	10	109			
DRB1*1120	23	35	10	11	12		
DRB1*1121	11	12	8				
DRB1*1122	55	25	36	67	68		
DRB1*1123	35	36	67	68	132	66	
DRB1*1124	108	36	67	119	68		
DRB1*1125	36	67	66	14			
DRB1*1126	133	134	18	25	35		
DRB1*112701	135	68	13				
DRB1*112702	35	68	136				
DRB1*1128	134	137	138	25	35	67	68
DRB1*1129	45	111	134	25	35	67	68
DRB1*1130	139	68					
DRB1*1131	35	140	10	109			
DRB1*1132	35	36	67	68	141		
DRB1*1133	142						
DRB1*1134	18	25	35	14			
DRB1*1135	142	14					
DRB1*1136	25	35	80	81	14		
DRB1*1137	45	111	134	18	35	67	68
DRB1*1138	143						
DRB1*1139	144	68					
DRB1*1140	23	25	35	67	125	122	14
DRB1*1141	35	67	125	122	14		



Table 23-7

Allele Number		Probe Number for Detection							
DRB1*1142	18	25	35	124	14				
DRB1*1143	144	68	14						
DRB1*120101	145	146	147	148	92	10	7	8	
DRB1*120102	145	146	147	148	92	10	8		
DRB1*120201	148	67	7	8					
DRB1*120202	148	67	120	8					
DRB1*120302	147	148	92	10	120				
DRB1*1204	148	36	10	7	8				
DRB1*1205	147	92	10	7	8				
DRB1*1206	147	148	92	10	7	8			
DRB1*1207	149								
DRB1*1208	150	148	92	10	7	8			
DRB1*130101	46	23	24	25	10	11	12	14	
DRB1*130102	151								
DRB1*130103	12	7	14						
DRB1*130201	46	23	24	25	10	11	12		
DRB1*130202	12	152							
DRB1*130301	42	109	153	33					
DRB1*130302	61	109	153						
DRB1*1304	25	61	11	12	14				
DRB1*1305	134	32	23	25	67	68			
DRB1*1306	46	23	25	10	109	14			
DRB1*130701	154	45	111	134	46	155	18	67	119
DRB1*130702	111	46	155	18	58	67	119	68	
DRB1*1308	46	50	11	12	14				
DRB1*1309	24	25	10	156	14				
DRB1*1310	46	23	25	10	109	153	14		
DRB1*1311	18	25	67	68	14				
DRB1*1312	111	61	10	109					

Table 23-8

Allele Number		Probe Number for Detection							
DRB1*1313	111	61	10	66					
DRB1*131401	18	25	67	119	68				
DRB1*131402	25	58	67	119	68				
DRB1*1315	30	25	11	12	14				
DRB1*1316	157								
DRB1*1317	97	12	14						
DRB1*1318	23	25	67	66	14				
DRB1*1319	30	50	11	12	14				
DRB1*1320	46	23	24	25	80	81	14		
DRB1*1321	111	25	61	67	68				
DRB1*1322	111	46	18	25	10	11	12	14	
DRB1*1323	11	12	33						
DRB1*1324	25	67	125	122	14				
DRB1*1325	154	45	111	134	46	18	25	124	
DRB1*1326	31	158	23	24	58	67	119	68	120
DRB1*1327	21	11	12	14					
DRB1*1328	159								
DRB1*1329	46	23	24	25	80	81			
DRB1*1330	25	61	10	109					
DRB1*1331	104	10	11	12					
DRB1*1332	23	61	11	12	14				
DRB1*1333	61	109	136						
DRB1*1334	160	11	12						
DRB1*1335	161								
DRB1*1336	46	23	24	10	11	12			
DRB1*1337	109	153	33						
DRB1*1338	61	11	12						
DRB1*1339	43	10	11	12					
DRB1*1340	46	23	24	10	11	12	14		

Table 23-9

Allele Number		Probe Number for Detection						
DRB1*1341	21	11	12					
DRB1*1342	23	67	68	14				
DRB1*1343	25	38	80	81	14			
DRB1*1344	111	134	46	18	25	14		
DRB1*1345	25	38	10	11	12			
DRB1*1346	18	104	162	67	135	68		
DRB1*1347	111	18	67	66	33			
DRB1*1348	61	11	12	14				
DRB1*1349	111	61	67	68				
DRB1*1350	134	137	25	67	68			
DRB1*1351	163							
DRB1*1352	46	32	52	25	10	11	12	14
DRB1*1353	30	24	11	12	14			
DRB1*1354	92	125	122	14				
DRB1*1355	111	42	67	66	33			
DRB1*140101	99	111	130	131	14			
DRB1*140102	164	111	38	130	14			
DRB1*1402	99	158	23	24				
DRB1*1403	99	23	66					
DRB1*1404	99	97	130	131	14			
DRB1*140501	165	166	131	14				
DRB1*140502	165	131	14					
DRB1*1406	45	30	23	24	14			
DRB1*140701	164	111	38	130	131			
DRB1*140702	38	131	33					
DRB1*1408	164	111	107	130	131	14		
DRB1*1409	167	134	46	22	32	23		
DRB1*1410	59	38	130	131	14			
DRB1*1411	97	35	36	130	131	14		
DRB1*1412	30	23	24	66	14			

Table 23-10

Allele Number		Probe Number for Detection						
DRB1*1413	30	23	24	61				
DRB1*1414	111	50	130	131				
DRB1*1415	97	50	67	66	14			
DRB1*1416	38	10	11	12	14			
DRB1*1417	134	46	22	23	25	14		
DRB1*1418	23	24	166	130	131	14		
DRB1*1419	29	45	30	23	24	20		
DRB1*1420	133	150	30	50	14			
DRB1*1421	46	22	23	25	20	14		
DRB1*1422	50	38	105	67	135	68		
DRB1*1423	164	111	50	130	131	14		
DRB1*1424	30	158	23	24	10	168	156	
DRB1*1425	111	18	38	105	67	135	68	
DRB1*1426	169	14						
DRB1*1427	30	23	24	67	68	132	66	
DRB1*1428	38	8	113					
DRB1*1429	30	158	23	24	8			
DRB1*1430	134	46	22	32	23	25		
DRB1*1431	97	38	7	14				
DRB1*1432	164	111	38	71	14			
DRB1*1433	24	25	57	14				
DRB1*1434	164	111	107	7	14			
DRB1*1435	25	38	130	131	14			
DRB1*1436	49	131						
DRB1*1437	165	156	14					
DRB1*1438	38	170	14					
DRB1*1439	171	38	130	131	14			
DRB1*1440	30	50	124	132	66			
DRB1*1441	45	111	150	30	50	172		
DRB1*1442	18	25	130	131				

Table 23-11

Allele Number		Probe Number for Detection						
DRB1*1443	173							
DRB1*1444	165	166	131					
DRB1*1445	165	10	131	14				
DRB1*150101	174							
DRB1*150102	175	176						
DRB1*150103	177	7	14					
DRB1*150104	177	25	10	156	14			
DRB1*150201	177	25	58	10	156			
DRB1*150202	25	10	168	156				
DRB1*150203	178							
DRB1*1503	177	179	25	58	10	156	14	
DRB1*1504	177	67	180	14				
DRB1*1505	177	25	58	16	14			
DRB1*1506	181							
DRB1*1507	177	58	10	156	14			
DRB1*1508	182							
DRB1*1509	183	156						
DRB1*1510	177	12	14					
DRB1*1511	177	58	10	156				
DRB1*1512	177	61	42	10	156	14		
DRB1*1513	177	25	58	184	156	14		
DRB1*160101	177	67	120					
DRB1*160102	177	67	68					
DRB1*160201	177	120						
DRB1*160202	177	124						
DRB1*1603	185							
DRB1*1604	127	58	67	68	132	66		
DRB1*1605	177	10	120					
DRB1*1607	186							
DRB1*1608	177	187	67	120				

Table 23-12

Allele Number		Probe Number for Detection					
DRB3*010101	188	34	172	162	26	28	
DRB3*01010201	189	26					
DRB3*010103	188	34	172	26	28		
DRB3*010104	28	175					
DRB3*0102	190	191	34	172	162	26	28
DRB3*0103	188	192	172	162	26	28	
DRB3*0104	193	34	172	162	26	28	
DRB3*0105	194	28					
DRB3*0106	188	34	50	162	26	28	
DRB3*0107	188	20	40	48			
DRB3*0108	188	23	24	162	26	28	
DRB3*0109	188	195	162	26	28		
DRB3*0110	196						
DRB3*0201	189	14					
DRB3*020201	197	198	195	47	48		
DRB3*020202	198	195	47	40	41		
DRB3*020203	199						
DRB3*020204	47	200	48				
DRB3*0203	198	201	47	48			
DRB3*0204	47	26	27	14			
DRB3*0205	30	195	47	48			
DRB3*0206	23	202	47	48			
DRB3*0207	47	104	162	48			
DRB3*0208	47	61	42	48			
DRB3*0209	195	92	40	48			
DRB3*0210	197	198	195	40	48		
DRB3*0211	47	10	48				
DRB3*0212	198	195	47	48			
DRB3*0213	203						
DRB3*0214	204						

Table 23-13

Allele Number		Probe Number for Detection					
DRB3*0215	198	195	47	40			
DRB3*0216	47	105	48				
DRB3*0217	47	67	48				
DRB3*030101	92	48	14				
DRB3*030102	205						
DRB3*0302	198	92	48	14			
DRB3*0303	30	50	162	92	26	28	
DRB4*010101	206						
DRB4*0102	207						
DRB4*010302	208	209	210				
DRB4*010303	206	131					
DRB4*010304	211						
DRB4*0104	212	213					
DRB4*0105	208	214					
DRB4*0106	208	209	210				
DRB4*0201N	87	14					
DRB5*010101	215						
DRB5*010102	129	58	67	119	68		
DRB5*0102	2	216	217	67	119	120	
DRB5*0103	218	219	220				
DRB5*0104	129	66					
DRB5*0105	108	67	119	120			
DRB5*0106	129	113					
DRB5*0107	129	10	221	120			
DRB5*0109	222						
DRB5*0110N	218	217	67	119	120		
DRB5*0111	129	156					
DRB5*0112	129	223	224	225			
DRB5*0202	226	113					
DRB5*0203	218	217	10	168	156		
DRB5*0204	218	67	180	113			
DRB5*0205	218	217	113				

Table 24-1

Allele Number		Probe Number for Detection						
		0	1	2	3	4	5	
DRB1*010101	0							
DRB1*010102	6							
DRB1*010201	7	8						
DRB1*010202	9							
DRB1*0103	10	11	12					
DRB1*0104	13	14						
DRB1*0105	15							
DRB1*0106	16	14						
DRB1*0107	17							
DRB1*0108	18							
DRB1*0109	19	16						
DRB1*0110	20							
DRB1*030101	21	22	23	14				
DRB1*030102	24	13	14					
DRB1*030201	21	25	23					
DRB1*030202	21	13						
DRB1*0303	25	26	27	28	24	23	14	
DRB1*0304	22	26	29	30	24	23	14	
DRB1*030501	22	26	27	28	30	24	23	
DRB1*030502	23	31						
DRB1*0306	22	32	26	27	28	24	23	14
DRB1*0307	21	23	14					
DRB1*0308	21	33	34	23	14			
DRB1*0309	35							
DRB1*0310	36	24	23	14				
DRB1*0311	22	37	38	23	14			
DRB1*0312	39	40	24	23				
DRB1*0313	41	24	23	14				
DRB1*0314	22	26	27	28	30	24		



Table 24-2

Allele Number	Probe Number for Detection						
DRB1*0315	22	26	27	28	30	24	14
DRB1*0316	42						
DRB1*0317	43	44	18	45	13		
DRB1*0318	46	14					
DRB1*0319	47	24	23	14			
DRB1*0320	23	8					
DRB1*0321	48	30	24	23	14		
DRB1*0322	49						
DRB1*0323	35	14					
DRB1*0324	30	37	38	13	14		
DRB1*0325	22	26	50	51	30	24	23 14
DRB1*040101	52	20					
DRB1*040102	53						
DRB1*0402	52	12	14				
DRB1*040301	54	18	55	14			
DRB1*040302	54	56	55	14			
DRB1*0404	52	14					
DRB1*040501	54	57	58	18	39		
DRB1*040502	59						
DRB1*040503	54	57	58	18	39		
DRB1*040504	58	40	31				
DRB1*0406	54	58	55	14			
DRB1*040701	54	18	55				
DRB1*040702	60						
DRB1*0408	61	54	57	58	18		
DRB1*0409	58	39	20				
DRB1*0410	58	18	39	14			
DRB1*0411	52	55	14				
DRB1*0412	58	39	10	62	14		
DRB1*0413	58	20	14				

Table 24-3

Allele Number	Probe Number for Detection					
DRB1*0414	58	10	11	12		
DRB1*0415	54	58	34	63	64	
DRB1*0416	65					
DRB1*0417	58	39	55			
DRB1*0418	58	10	62	14		
DRB1*0419	61	54	57	58		
DRB1*0420	58	55				
DRB1*0421	61	54	57	20		
DRB1*0422	58	18	24	23	14	
DRB1*0423	66					
DRB1*0424	39	40	67			
DRB1*0425	58	18	63	64	68	62
DRB1*0426	69					
DRB1*0427	18	55	8			
DRB1*0428	58	18	30	39		
DRB1*0429	70					
DRB1*0430	71					
DRB1*0431	54	58	18	68	62	
DRB1*0432	72					
DRB1*0433	73					
DRB1*0434	74	75	18	20		
DRB1*0435	54	30	20			
DRB1*0436	54	63	64	14		
DRB1*0437	54	11	12	14		
DRB1*0438	54	47	20			
DRB1*0439	76					
DRB1*0440	77					
DRB1*0441	54	78	79	55	14	
DRB1*0442	54	30	14			
DRB1*0443	54	58	30			

Table 24-4

Allele Number	Probe Number for Detection				
DRB1*0444	58	18	13	14	
DRB1*070101	80	37	81		
DRB1*070102	82	83	84	81	
DRB1*0703	85				
DRB1*0704	83	13			
DRB1*0705	86				
DRB1*0706	83	87	81		
DRB1*0707	88				
DRB1*080101	89	40	63	62	31
DRB1*080102	90				
DRB1*080201	91	31			
DRB1*080202	89	18	63	62	
DRB1*080203	92				
DRB1*080302	21	10	62		
DRB1*080401	21	62	14		
DRB1*080402	18	63	62	93	
DRB1*080403	62	93	31		
DRB1*080404	62	14	31		
DRB1*0805	89	39	63	64	
DRB1*0806	39	63	62	14	
DRB1*0807	94	63	62	31	
DRB1*0808	36	95	62		
DRB1*0809	96	48	63	62	31
DRB1*0810	89	39	10	62	14
DRB1*0811	97	62			
DRB1*0812	10	62	8		
DRB1*0813	96	89	18	62	
DRB1*0814	98				
DRB1*0815	95	10	62		
DRB1*0816	99	31			

Table 24-5

Allele Number		Probe Number for Detection						
DRB1*0817	30	39	63	62				
DRB1*0818	96	89	39	10	64			
DRB1*0819	100	10	62					
DRB1*0820	101	18	63	62	14			
DRB1*0821	102							
DRB1*0822	8	103	31					
DRB1*0823	15	62						
DRB1*0824	89	18	63	64				
DRB1*090102	104	84						
DRB1*0902	104	56						
DRB1*100101	105							
DRB1*100102	106	107						
DRB1*110101	91	34	63	64				
DRB1*110102	34	63	64	31				
DRB1*110103	34	63	108	109	110			
DRB1*110104	111	18	30	33	63	64		
DRB1*1102	21	34	10	11	12	14		
DRB1*1103	91	12	14					
DRB1*110401	91	63	64	14				
DRB1*110402	34	14	31					
DRB1*1105	112	33	34	63	64			
DRB1*110601	34	63	64	8				
DRB1*110602	34	63	64	7	8			
DRB1*1107	33	34	24	23	14			
DRB1*110801	18	30	33	64				
DRB1*110802	18	30	33	64				
DRB1*1109	113	27	28	30	33	63	64	
DRB1*1110	26	114	48	30	33	63	64	
DRB1*1111	30	33	63	11	12			
DRB1*111201	115	30	33	63	64			

Table 24-6

Allele Number	Probe Number for Detection						
DRB1*111202	101	116	48	30	33	63	64
DRB1*11113	21	30	33	67	7	14	
DRB1*11114	21	34	10	11	12		
DRB1*11115	117	34	63	118	64		
DRB1*11116	27	33	10	11	12	14	
DRB1*11117	21	33	55	7	14		
DRB1*11118	18	33	10	64	14		
DRB1*11119	18	33	10	64			
DRB1*11120	27	33	10	11	12		
DRB1*11121	33	10	11	12			
DRB1*11122	54	30	34	63	64		
DRB1*11123	33	34	63	64	68	62	
DRB1*11124	99	34	63	118	64		
DRB1*11125	34	63	52	14			
DRB1*11126	43	101	119	18	30	33	
DRB1*1112701	120	64	13				
DRB1*1112702	33	64	23				
DRB1*11128	119	78	79	30	33	63	64
DRB1*11129	43	101	119	30	33	63	64
DRB1*11130	121	64					
DRB1*11131	122	123	10	64			
DRB1*11132	33	34	63	64	124		
DRB1*11133	125						
DRB1*11134	18	30	33	14			
DRB1*11135	125	14					
DRB1*11136	30	33	11	12	14		
DRB1*11137	43	101	119	18	33	63	64
DRB1*11138	126						
DRB1*11139	45	64					
DRB1*11140	27	30	33	63	11	12	

Table 24-7

Allele Number	Probe Number for Detection							
DRB1*1141	33	63	11	12	14			
DRB1*1142	18	30	33	64	14			
DRB1*1143	45	64	14					
DRB1*120101	127	21	128	129	84	10	7	8
DRB1*120102	127	21	128	129	84	10	8	
DRB1*120201	129	63	7	8				
DRB1*120202	129	63	110					
DRB1*120302	128	129	84	10	110			
DRB1*1204	129	34	10	7				
DRB1*1205	128	84	10	7	8			
DRB1*1206	21	128	129	84	10	7	8	
DRB1*1207	130							
DRB1*1208	131	129	84	10	7	8		
DRB1*130101	21	27	30	10	11	12	14	
DRB1*130102	132							
DRB1*130103	12	7	14					
DRB1*130201	21	27	30	10	11	12		
DRB1*130202	133	134						
DRB1*130301	40	135	136	31				
DRB1*130302	39	135	136					
DRB1*1304	21	40	10	11	12	14		
DRB1*1305	119	113	27	30	63	64		
DRB1*1306	44	27	30	10	64	14		
DRB1*130701	137	43	101	119	44	138	18	63
DRB1*130702	101	44	138	18	56	63	118	64
DRB1*1308	44	48	11	12	14			
DRB1*1309	28	30	47	16	14			
DRB1*1310	44	27	30	10	135	136	14	
DRB1*1311	18	30	63	64	14			

Table 24-8

Allele Number		Probe Number for Detection							
DRB1*1312	101	39	10	64					
DRB1*1313	101	39	10	62					
DRB1*131401	18	30	63	118	64				
DRB1*131402	30	56	63	118	64				
DRB1*1315	25	30	11	12	14				
DRB1*1316	139								
DRB1*1317	21	89	30	10	11	12	14		
DRB1*1318	27	30	63	62	14				
DRB1*1319	21	48	10	11	12	14			
DRB1*1320	44	27	28	30	11	12	14		
DRB1*1321	21	40	63	64					
DRB1*1322	101	44	18	30	10	11	12	14	
DRB1*1323	11	12	31						
DRB1*1324	30	63	11	12	14				
DRB1*1325	137	43	101	119	44	18	30	64	
DRB1*1326	26	113	27	28	56	63	108	109	110
DRB1*1327	22	11	12	14					
DRB1*1328	140								
DRB1*1329	44	27	28	30	11	12			
DRB1*1330	30	39	10	64					
DRB1*1331	141	10	11	12					
DRB1*1332	27	39	11	12	14				
DRB1*1333	39	135	23						
DRB1*1334	142	11	12						
DRB1*1335	143								
DRB1*1336	44	27	28	10	11	12			
DRB1*1337	135	136	31						
DRB1*1338	39	11	12						
DRB1*1339	41	10	11	12					

Table 24-9

Allele Number	Probe Number for Detection						
DRB1*1340	44	27	28	10	11	12	14
DRB1*1341	22	11	12				
DRB1*1342	27	63	64	14			
DRB1*1343	30	36	11	12	14		
DRB1*1344	101	119	44	18	30	14	
DRB1*1345	30	36	10	11	12		
DRB1*1346	18	141	144	63	120	64	
DRB1*1347	101	18	63	62	31		
DRB1*1348	39	11	12	14			
DRB1*1349	101	39	63	64			
DRB1*1350	119	78	30	63	64		
DRB1*1351	145						
DRB1*1352	44	50	51	30	10	11	12 14
DRB1*1353	25	28	11	12	14		
DRB1*1354	84	11	12	14			
DRB1*1355	101	40	63	62	31		
DRB1*140101	91	101	55	7	14		
DRB1*140102	146	101	36	67	55		
DRB1*1402	91	27	28				
DRB1*1403	91	27	62				
DRB1*1404	91	89	55	7	14		
DRB1*140501	147	148	7	14			
DRB1*140502	147	7	14				
DRB1*1406	149	43	25	27	28	14	
DRB1*140701	146	101	36	55	7		
DRB1*140702	36	7	31				
DRB1*1408	146	101	95	55	7	14	
DRB1*1409	43	119	44	26	113	27	
DRB1*1410	57	36	55	7	14		
DRB1*1411	89	33	34	55	7		
DRB1*1412	25	27	28	64	68	62	



Table 24-10

Allele Number	Probe Number for Detection						
DRB1*1413	25	27	28	39			
DRB1*1414	146	101	48	55	7		
DRB1*1415	89	48	63	62	14		
DRB1*1416	48	36	10	11	12		
DRB1*1417	119	44	26	27	30	14	
DRB1*1418	27	28	148	55	7	14	
DRB1*1419	21	25	27	28	20		
DRB1*1420	43	101	131	25	48		
DRB1*1421	44	26	27	30	20		
DRB1*1422	48	36	95	63	120	64	
DRB1*1423	146	101	48	55	7	14	
DRB1*1424	25	113	27	28	47	19	16
DRB1*1425	101	18	36	95	63	120	64
DRB1*1426	150	14					
DRB1*1427	25	27	28	63	64	68	62
DRB1*1428	36	8	103				
DRB1*1429	25	113	27	28	8		
DRB1*1430	119	44	26	113	27	30	
DRB1*1431	89	36	7	14			
DRB1*1432	146	101	36	67	14		
DRB1*1433	28	30	55	14			
DRB1*1434	146	101	95	7	14		
DRB1*1435	30	36	55	7	14		
DRB1*1436	151	7					
DRB1*1437	147	16	14				
DRB1*1438	36	13	14				
DRB1*1439	152	36	55	7	14		
DRB1*1440	25	48	64	68	62		
DRB1*1441	43	101	131	25	153	154	
DRB1*1442	18	30	55	7			
DRB1*1443	155						

Table 24-11

Allele Number		Probe Number for Detection						
DRB1*1444	147	148	7					
DRB1*1445	147	47	7	14				
DRB1*150101	156							
DRB1*150102	157	158						
DRB1*150103	159	7	14					
DRB1*150104	159	30	47	16	14			
DRB1*150201	159	30	56	47	16			
DRB1*150202	30	47	19	16				
DRB1*150203	160							
DRB1*1503	159	161	30	56	47	16	14	
DRB1*1504	159	162	16	14				
DRB1*1505	159	30	56	16	14			
DRB1*1506	163							
DRB1*1507	159	56	47	16				
DRB1*1508	164							
DRB1*1509	165	16						
DRB1*1510	159	12						
DRB1*1511	159	56	47	16				
DRB1*1512	159	39	40	47	16	14		
DRB1*1513	159	30	56	166	16	14		
DRB1*160101	159	63	110					
DRB1*160102	159	63	64					
DRB1*160201	159	110						
DRB1*160202	159	64						
DRB1*1603	167							
DRB1*1604	159	62						
DRB1*1605	159	10	110					
DRB1*1607	168							
DRB1*1608	159	28	63	110				
DRB3*010101	169	32	154	144	24	13		
DRB3*01010201	170	24						

Table 24-12

Allele Number	Probe Number for Detection					
DRB3*010103	169	32	154	24	13	
DRB3*010104	169	32	154	144	24	13
DRB3*0102	171	172	32	154	144	24 13
DRB3*0103	169	173	154	144	24	13
DRB3*0104	169	32	154	144	24	13
DRB3*0105	174	13				
DRB3*0106	169	32	48	144	24	13
DRB3*0107	169	175	38	13		
DRB3*0108	169	27	28	144	24	13
DRB3*0109	169	176	144	24	13	
DRB3*0110	177					
DRB3*0201	170	14				
DRB3*020201	178	179	176	45	13	
DRB3*020202	178	179	176	45	38	23
DRB3*020203	180					
DRB3*020204	45	181	13			
DRB3*0203	179	29	45	13		
DRB3*0204	45	24	23	14		
DRB3*0205	178	25	176	45	13	
DRB3*0206	182	183	45	13		
DRB3*0207	45	141	144	13		
DRB3*0208	45	39	40	13		
DRB3*0209	176	84	38	13		
DRB3*0210	178	179	176	38	13	
DRB3*0211	45	47	13			
DRB3*0212	184	13				
DRB3*0213	185					
DRB3*0214	186					
DRB3*0215	178	179	176	45	38	
DRB3*0216	45	95	13			
DRB3*0217	45	162	13			

Table 24-13

Allele Number	Probe Number for Detection					
DRB3*030101	84	13	14			
DRB3*030102	187					
DRB3*0302	179	48	84	175	38	13
DRB3*0303	25	48	144	84	24	13
DRB4*010101	188					
DRB4*0102	189					
DRB4*010302	80	190	14			
DRB4*010303	188	191				
DRB4*010304	192					
DRB4*0104	23	193				
DRB4*0105	194	195				
DRB4*0106	194	190	193			
DRB4*0201N	80	14				
DRB5*010101	196					
DRB5*010102	117	56	63	118	64	
DRB5*0102	197	78	63	108	110	
DRB5*0103	198	199	200			
DRB5*0104	117	62				
DRB5*0105	99	63	108	110		
DRB5*0106	117	103				
DRB5*0107	117	10	108	110		
DRB5*0109	201					
DRB5*0110N	197	78	63	108	110	
DRB5*0111	117	16				
DRB5*0112	117	84	67	81		
DRB5*0202	202	103				
DRB5*0203	198	78	47	19	16	
DRB5*0204	203	162	16	103		
DRB5*0205	203	78	103			

(Example 13)

Probes for identification of HLA-MICA allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in Tables 25-1 and 25-2 were used and 2  $\mu$ l of the mixed primers consisting of 1  $\mu$ l each of respective solutions of the following primers (10 pmol/ $\mu$ l) and 6  $\mu$ l of ultra pure water:

AGTGGAGCCAGTGGACCCAAGA (SEQ ID NO: 104)

TGATGTTTTCTTCTTACAACAAC (SEQ ID NO: 105)

After PCR amplification, referring to Amp Plot and Dissociation curves on a display of 5700 software, and to the allele-probe list 1 (Tables 27-1 and 27-2), it was identified as MICA\*00201.

(Example 14)

Extraction of DNA from 1 ml of human blood was performed in the same way as in Example 3. PCR of human HLA-MICA was then performed in the same manner as in Example 2 except that 3  $\mu$ l of the mixed primer consisting of 1  $\mu$ l each of the solutions containing the following sequences at 10 pmol/ $\mu$ l respectively, and 12  $\mu$ l of ultra pure water were used:

GTCTTCGTTATAACCTCACGGT (SEQ ID NO:106)

GCTCGTGAGCCTGCAGGTCCTG (SEQ ID NO:107)

AGTGGAGCCAGTGGACCCAAGA (SEQ ID NO:108)

At the same time, a DNA microarray was prepared  
5 to identify the allele in the specimen described  
above in the same manner as in Example 2, except that  
probes in the probe list of Table 26-1 were used to  
form the probe spots respectively.

Then, hybridization was performed using the  
10 above specimen and the prepared DNA microarray in the  
same manner as in Example 2. The DNA microarray was  
air-dried and the fluorometry measurement was  
conducted with GenePix4000B (Axon). Referring to the  
allele-probe correspondence list 2 (Tables 28-1 and  
15 28-2), it was identified as MICA\*00201..

#### Allele list

MICA\*001

gltcttcgttataaacctcacggctcgtcgtcctgggaatggatcgtgacagtcagggtttctcactgaggtacatctgga  
20 tggctcagcccttctcgtcgtcgtacaggcagaaatgcaggggcaaagccccaggacagtgggcagaagatgtcctg  
ggaaataagatcgtggacagagagaccagAgacttgacagggaacggaaaggaccicaggatgacctgggtcata  
tcaaggaccagaaagaaggcttgcattccctccaggagatlagggctctgagatccatgaagacaacagcaccag  
gagctcccagcatcttctactacgatggggagctcttctctcccaaaacctggagactAaggaatggacaatgccc  
cagctctccagagctcagaccttggccaatgaacgtcaggaatttcttgaaggaagatgccaatgaagaccaagacac  
25 actatcacgctatgcatgcagactgccctgcaggaactacggcgatcttaAaatccGgcgtagctctgaggagaac  
agtgcccccatggatgaatgtcaccgcagcgaggccicagagggaacattaccgtgacatgcagggtctctggc  
ttctatccctgggaatatcacactgaGcttggcgtcaggatggggtactctttagccacgacaccagcagtgggggg

[illegible]

25 gtcctcggtataaacctcacggctgctgtccGgggatggatctgtgcagtcagggtttctcgctgaggtaaatctgga  
tggctagcccttccctgcgcctgtacaggcagaaaatgcagggcaaagccccagggacagtgggcagaagatgtccctg  
ggaaaataagacatgggacagagagaccagggacttgacagggaacggaaaggacctcaggatgaccttggtcata  
tcaaggaccagaaagaaggcttgcatctccctccaggagatagggtctgtgagatccatgaagacaacagcaccag

[illegible]

25 gtcttcgttataaacctcacggctgcgtccctgggatggatctgtgcagtcagggcttcttgcctgagglacatctgga  
tggctagcccttcttgcgtctatgacaggcagaaaatgcagggcaaagccccagggacagctgggcagaagaagtccctg  
ggaaaatagacatgggacagagagaccagggaacttgacagggaacggaaaggacctcaggaatgacccctggctcata



tcaaggaccagaaagaaggcctgcatccctccaggagattagggctctgagatccaigaagacaacagcaccag  
gagctcccagcatctctacgaaggaggctctctctcccaaacctggagactgaggaatggacaGtgccc  
cagctctccagagctcagacctggccaigaacgicaggaattcttgaaggaagatgccatgaagaccaagacac  
actatcacgctaigcatgcagactgccctgcaggaactacggcgatactaaaaaccggcgtagtctcaggagaaac  
5 agtgccccccatggtagaagtcacccgcagcaggccctcagagggcaacattaccgtgacatgcagggtctccagc  
tctatccccggaatatcacactgaCctggcgicaggatgggtatctttagccacgacaccagcagtgggggg  
atgctctgctgatgggaatggaacctaccagacctgggtggccaccaggatttggcGaggagaggagcagaggtt  
cacctgctacatggaacacagcgggaatcacagcactacccctgctccctct (SEQ ID NO:113)

MICA#006

10 gcttctgtataacctcacggctgctgctcgggaatggatctgctcagtcagggttcttctgctgaggtacatctgga  
tggtcagcccttcttgcgctatgacaggcagaaatgcaggggcaagccccaggagacatgggcagaagaatgctctg  
ggaaataagacatgggacagagagaccagggtctgacagggaacggaaaggacctcaggatgacctgggtcata  
tcaaggaccagaaagaaggcctgcatccctccaggagattagggctctgagatccaigaagacaacagcaccag  
gagctcccagcatctctacgaaggaggctctctctcccaaacctggagactgaggaatggacagtggccc  
15 cagctctccagagctcagacctggccaigaacgicaggaattcttgaaggaagatgccatgaagaccaagacac  
actatcacgctaigcatgcagactgccctgcaggaactacggcgatactagaatccagcAtagtctcaggagaaac  
agtgccccccatggtagaagtcacccgcagcaggccctcagagggcaacatcaccgtgacatgcagggtctccagc  
tctatccccggaatatcacactgacctggcgctcaggatgggtatctttagccacgacaccagcagtgggggg  
atgctctgctgatgggaatggaacctaccagacctgggtggccaccaggatttggcaaggagaggagcagaggtt  
20 caccctgctacatggaacacagcgggaatcacagcactacccctgctccctctgggaaagtgctgggtctcagagt  
catggcagacatccatgttctgctgtgctgctgctgctgctgctatcttctgtatattatcttctatgtcc  
gttgttgtagaagaaaacatcagctgcagagggtccagagctcgtagcctgcagggtctggatcaacaccagt  
tgggacgagtgaccacagggaatgccacacagctcggaattcagccctgtagtgcagctctgggtccactggctcc  
act (SEQ ID NO:114)

25 MICA#00701

gcttctgtataacctcacggctgctgctcgggaatggatctgctcagtcagggttctctgctgaggtacatctgga  
tggtcagcccttcttgcgctgtagcaggcagaaatgcaggggcaagccccaggagacatgggcagaagaatgctctg

ggaataagacatgggacagagagaccagggaattgacagggaaaggaccagggaatgacccggcctata  
tcaaggaccagaaagaaggcttgcatccctccaggagattagggctgtgagatccaagaagacaacagcaccag  
gagctcccagcaattctactacatggggagctcttctctcccaaaactggagactgaggaatggacaatgcc  
cagctctccagagctcagacctggccatgaacgtcaggaattcttgaaggaagatgccatgaagaccaagacac  
5 actatcacgctatgcatgcagactgcttcaggaactacggcgatactaaaaatccggcgtagtcttgaggagaac  
agtgcaccccatggatgaatgaccccgagTgaggccctcagagggcaacattaccgtgacatgcagggctcttgcc  
ttctatccctggaatatcacactgagctggcgctcaggatggggtaatttgagccacgacaccagcagtgggggg  
atgtcttgccatgagggaatggaacctaccagacctgggtggccaccaggatttgccaaggagaggagcagaggtt  
caccctgctacatggaacacagcgggaatcacagcactcaccctgtgcccctcgggaaagtgttggtgcttcagagt  
10 catggcagacatccatgtttctgctgttgctgctgctgctattttgtattattattttctatgtccgtgtt  
gtaagaagaaaacatcagctgcagagggtccag(SEQ ID NO:115)

MICA\*00702

g t c t t c g t t a t a a c c t c a c g g t g c t g t c c t g g g a t g g a t c t g t g c a g t c a g g g t t t c t c g c t g a g g t a c a t c t g g a  
t g g t c a g c c c t t c c t g c g c t g t g a c a g g c a g a a a t g c a g g g c a a a g c c c c a g g g a c a g t g g g c a g a a g a t g t c c t g  
15 g g a a a t a a g a c a t g g g a c a g a g a c c a g G g a c t t g a c a g g g a a c g g a a g g a c c t c a g g a t g a c c c t g g c t c a t a  
t c a a g g a c c a g a a a g a a g g c t t g c a t t c c c t c c a g g a g a t t a g g g t c t g t g a g a t c c a t g a a g a c a a c a g c a c c a g  
g a g c t c c c a g c a t t t c t a c t a c g a t g g g g a g c t c t t c c t c t c c c a a a a c c t g g a g a c t G a g g a a t g g a c a a t g c c c  
c a g t c c t c c a g a g c t c a g a c c t t g g c c a t g a a c g t c a g g a a t t t c t t g a a g g a a g a t g c c a t g a a g a c c a a g a c a c  
a c t a t c a c g c t a t g c a t g c a g a c t g c c t g c a g g a a c t a c g g c g a t a t c t a a a a t c c g g c g t a g t c c t g a g g a g a a c  
20 a g t g c c c c c c a t g g t g a a t g t c a c c c g c a g c g a g g c c t c a g a g g g c a a c a t t a c c g t g a c a t g c a g g g c t t c t g g c  
t t c t a t c c c t g g a a t a t c a c a c t g a g c t g g c g t c a g g a t g g g g t a t c t t t g a g c c a c g a c a c c c a g c a g t g g g g g  
a t g t c c t g c c t g a t g g g a a t g g a a c c t a c c a g a c c t g g g t g g c c a c c a g g a t t t g c c a a g g a g a g g a g c a g a g g t t  
c a c c t g c t a c a t g g a a c a c a g c g g g a a t c a c a g c a c t c a c c c t g t g c c c t c t g (SEQ ID NO:116)

MICA#00801

25 g l c t t c g t t a t a a c c t c a c g g t g c t g t c c t g g g a t g g a t c t g t g c a g t c a g g g t t t c t t g c t g a g g t a c a t c t g g a  
t g g t c a g c c c t t c c t g c g c t a t g a c a g g c a g a a t g c a g g g c a a a g c c c c a g g g a c a g t g g g c a g a a g a t g t c c t g  
g g a a t a a g a c a t g g g a c a g a g a c c a g g g a c t t g a c a g g g a a c g g a a g g a c c t c a g g a t g a c c t t g g c t c a t a

[illegible]

MICA\*00802

gtcttcgttataacctcacggctgctccctgggaatggatctgtgcagtcagggcttcttgctgaggtaacatcggaa  
15 tggtcagcccttccctgcgcctatgacaggcagaaaatgcagggcagaagccccagggacagctgggcagaagaatgctctg  
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gagctcccagcatttctactacgaatggggagctcttccctccccaaaacctggagactgaggaatggacagtgcctc  
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20 actatcacgctatgcatgcagactgccctgcaggaactacggcgatactagaatccggcgtagtcttgaggagaac  
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caccctgctacatggaacacagcgggaatcacagcactcaccttgctccctctgggaaagtgttggtgcttcagagt  
25 catctggcagacattccatgttctgctgttgcctgctggcctgctgctTatttttgttattatttttctatgtccgt  
tgttgttaagaagaaaacatcagctgcagagggtccag (SEQ ID NO:118)

**MICA#00803**



MICA#010

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20 ggaaaataagacatgggacagagagaccagggaactgacagggaacggaaaggacctcaggatgacctggctcata  
tcaaggaccagaaagaaggcttgcatctccctccaggagatagggtctgtgagatccaagaagacaacagccagg  
gagctcccagcatcttctacgatggggagctcttctctcccaaaacctggagactgaggaatggacagtgccc  
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25 agtgcaccccaatggatgaatgtcacccgcagcgaggccctcagagggaacatcacctgacatgcagggcttccagc  
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cacc|tgc|acal|ggaacacagcgggaatcacagcac|cacc|t|tgc|c|c|tgggaaag|tgc|tgg|tgc|t|cagag|  
cat|ggcagacat|cca|gt|t|c|tgc|t|tgc|tgc|tgc|tgc|t|a|t|t|t|gt|a|t|a|t|a|t|t|t|c|a|t|t|c|c|gt|t|  
gt|t|g|aagaagaaaaca|tcag|tgcagaggg|ccagagc|c|t|gagcc|tgcagg|tcc|ggatcaacacc|cag|t|gg|  
gacgag|taccacagga|gccacacagc|cggat|t|cagcc|c|t|gat|t|cag|c|t|t|ggg|tccac|tggc|tccac|t

5 (SEQ ID NO:122)

MICA\*011

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ggaaaaaagacatgggacagagagaccagggaacttgacagggaacggaaaggacctcaggaatgacctggcctcata  
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gagctcccagcatcttactacgatggggagctcttcccttcccaaaacctgggagactgaggaatggacaatgccc  
cagctctccagagctcagaccttggccatgaacgtcaggaatttcttgaaggaagatgccgtgaagaccaagacac  
actatcacgctatgcatgcagactgccctgcaggaactacggcgatacttaaaatccggcgtagtccctgaggagaac  
agtgccccccatgggtgaatgtcacccgcagcaggccctcagagggcaacattaccgtgacatgcagggcttctggc

15 t t c t a t c c c t g g a a t a t c a c a c t g a g c t g g c g t c a g g a t g g g g t a t c t t t g a g c c a c g a c a c c c a g c a g t g g g g g g  
a t g t c c t g c c t g a t g g g a a t g g a a c c t a c c a g a c c t g g g t g g c c a c c a g g a t t t g c c a a g g a g a g g a g c a g a g g t t  
c a c c t g c t a c a t g g a a c a c a g c g g g a a t c a c a g c a c t c a c g c t g t g c c c t c t g g g a a a g t g c t g g t g c t t c a g a g t  
c a t t g g c a g a c a t t c c a t g t t t c t g c t g t g c t g c t g c t g c t g c t a t t t t g t t a t t a t t a t t t c t a t g t c t  
g t g t t g t a a g a g a a a c a t c a g c t g c a g a g g t c c a g a g c t c g t g a g c c t g c a g g t c c t g g a t c a a c a c c c a g t  
20 t g g g a c g a g t g a c c a c a g g g a t g c c a c a c a g c t c g g a t t t c a g c c t c t g a t g t c a g c t c t t g g g t c c G c t g g c t c c  
a c t (SEQ ID NO:123)

MICA\*01201

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ggaaataagacatgggtacagagagaccagagacttgacagggaacggaaaggacctcaggatgacctgggtcata  
tcaaggaccagaaagaaggcttgcattcttctcaggagattagggtctgtgagatccatgaagacaacagcaccag  
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caglcctccagagctcagacctlggccaigaacgicaggaatllctlgaaggaagalgccalgaagaccaagacac  
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5 atglcctgccatgggaalggaaactaccagacctgggtggccaccaggatllgccaaggagaggagcagagglt  
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glaagaagaaaacatcagctgcagagggicagagctcgtgagccgcagggtcctggatcaacaccagtlgggac  
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10 Q ID NO:124)

MICA\*01202

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ggaaataagacatgggacagagagaccagagactlgacagggaaacggaaaggacctcaggatgacctgggtcata  
15 tcaaggaccagaaagaaggctlgcatlccclccaggagatlagggclgtlgagatccatgaagacaacagcaccag  
gagclccagcatllctactacgatggggagclcllctclcccaaaacctggagactgaggaatggacaatgccc  
caglcctccagagctcagacctlggccaigaacgicaggaatllctlgaaggaagalgccatgaagaccaagacac  
tclalcacgctalgcatgcagactgccigcaggaactacggcgataltclaaaatccggcglaglcctgaggagaac  
aglgcccccaatggigaalgtcacccgcagcgaggccicagagggcaacattaccglgacatgcagggtlctlggc  
20 llctatccc tggaaatlcacactgagclggcgicaggatgggglatctllgagccacgacaccagcaglgggggg  
atglcctgccatgggaalggaaactaccagacctgggtggccaccaggatllgccaaggagaggagcaAagglt  
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MICA\*013

gltclcgltataacctcacggtgclgtlccgggatggatcgtlgtcaglcagggtllctlcgtgaggtacatctgga  
25 tggicagcccllctlgcgclgtlacaggcagaaatgcagggcaaagcccaggagacaglgggcagaagaatgltcctg  
ggaaataagacatgggacagagagaccagggactlgacagggaaacggaaaggacctcaggatgacctgggtcata  
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gagctcccagcatttctactacgatggggagctcttccctccccaaaacctggagactgaggaaaggacagtgtccc  
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actatcacgctatgcatgcagactgcttcaggaactacggcgatattctagaatccggcgtagctctgaggagaac  
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5 tttctatccccggaaatcacactgagctggcgctcaggatggggtaattttagaccacgacacccagcagtgggggg  
atgtcttgcctgatgggaatggaacctaccagacctgggtggccaccaggatttgcGaggagaggagcagagggt  
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MICA\*014

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cacctgtctacatggaacacagcgggaatcacagcactcacctgtgtccctct (SEQ ID NO:127)

20 MICA\*015

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25 gctctcgttataacctcacggtgctgtccggggatggatctgtgcagtcagggcttctcgtcaggtacatctgga  
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[illegible]



## MICA\*021

gtcttcgttataacctcacggigcigiccgggaiggaiciglcaglcagggtttctcacigagglacalcigga  
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ggaaaCaagacatgggacagagagaccagagactlgacagggaacggaaaggacctcaggatgacctggctcala  
5 tcaaggaccagaaagaaggctlgcatlccclccaggagattagggctciglgagatccatgaagacaacagcaccag  
gagctcccagcatttctactacgaltggggagctcttcccttcccaaaacctggagactgaggaatggacaatgccc  
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10 tttctatccctggaaatcacactlgagctggcgctcaggaltgggtatctttagccacgacaccagcagtgggggg  
atgtccigcctgaltgggaatggaaactaccagacctgggtggccaccaggatttgccaaggagaggagcagaggtt  
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## MICA\*022

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15 tggtcagcccttccigcgciglgacaggcagaaaigcaggggcaaagcccaggacagtgggcagaagaigtccig  
ggaaaCaagacatgggacagagagaccaggagactlgacagggaacggaaaggacctcaggatgacctggctcala  
tcaaggaccagaaagaaggctlgcatlccclccaggagattagggctciglgagatccatgaagacaacagcaccag  
gagctcccagcatttctactacgaltggggagctcttcccttcccaaaacctggagactgaggaatggacagtgtccc  
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20 actatcacgctatgcatgcagacigcctlcaggaactacggcgatacttgaatccAgcgtagctctgaggagaac  
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atgtccigcctgaltgggaatggaaactaccagacctgggtggccaccaggatttgccGaggagaggagcagaggtt  
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## 25 MICA\*023

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ggaaa1aagaca1gggacagagagaccagggacl1gacaggaacggaaaggacc1caggatgaccc1ggc1cata  
1 caaggaccagaaagaaggc11gcal1ccc1ccaggagallaggg1c1g1gagatccalgaagacaacagcaccag  
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5 actatcacgclatgcalgcagac1gcc1gcaggaac1acggcgat1c1aaaa1ccggcgtag1cc1gaggagaac  
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cacc1gclacal1ggaacacagcggaal1cacagcact1cacc1g1gccc1c1gggaaagtgc1gg1gcl1cagagt  
10 cal1ggcagacat1cca1g11c1gclg11gclgclGgclgclgclat1111g1tat1att111c1atg1ccg1  
1g11g1aa (SEQ ID NO:136)

MICA#024

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15 ggaaa1aagaca1gggacagagagaccagggacl1gacaggaacggaaaggacc1caggatgaccc1ggc1cata  
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atg1cc1gcc1ga1gggaalggaacl1accagacc1ggg1ggccaccaggall1gccaaggagaggagcagagg11  
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MICA#025

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cattggcagacatccatgtttctgctgtgctgctgctgctattttggtaattatttttctatgtccgtgtt  
10 gtaagaagaaaacatcagctgcagagggtccag (SEQ ID NO:142)

MICA\*030

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ggaaaataagacatgggacagagagaccagggtatgacagggaacggaaaggacctcaggatgacctgggtcata  
15 tcaaggaccagaaagaaggctlgcaltccctccaggagatlagggctcgtgagatccaigaagacaacagcaccag  
gagctcccagcatttctactacgatggggagctcttccctccccaaaaccggagactgaggaatggacaatgccc  
cagctccagagctcagacctlggccaigaacgtcaggaatttctlgaaggaagatgccaigaagaccaagacac  
actatcacgctatgcatgcagactgccctgcaggaactacggcgatacttaaaatccggcgtagctcctgaggagaac  
agtgcaccccatggigaatgicacccgcagcgaggccctcagagggaacattaccgtgacatgcagggtctctggc  
20 ttctatccciggaatatacacatgagctggcgctcaggatggggtatctttagccacgacaccagcagtgggggg  
atgtcctgccatgggaatggaacctaccagacctgggtggccaccaggatttgccaaggagaggagcagagggt  
caccgtctacatggaacacagcgggaalcacagcactcacGctgtgccctctg (SEQ ID NO:143)

MICA\*031

gtcttcgttataaaccacaggctgctgctccggggatggatctgtgcagtcagggtttctTgctgaggtacatctgga  
25 tggtcagcccccttcgtcgctatgacaggcagaaaatgcaggggcaaagccccaggacagtgggcagaagatgtccgt  
ggaaaataagacatgggacagagagaccagggtatgacagggaacggaaaggacctcaggatgacctgggtcata  
tcaaggaccagaaagaaggctlgcaltccctccaggagatlagggctcgtgagatccaigaagacaacagcaccag



gagctcccagcatttctactacgatggggagctcttccctcccaaaaccggagactaaggaaaggacaaatgccc  
cagctcccccagagctcagacctggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac  
actatcacgctatgcatgcagactgccatgcaggaactacggcgatatactaaaatccggcgtagctccaggagaaac  
agtgcacccccaatggatgaatgtcacccgcagcgaggccatcagagggaacaattaccgtgacatgcagggtcttggc  
5 tttctatcccaggaaatcacactgagctggcgatcaggaatgggtatctttagccacgacaccagcagtgggggg  
atgtcttgcctgatgggaatggaacctaccagacctgggtggccaccaggatttggcaaggagaggagcagagggt  
cacctgtctacatggaacacagcgggaatcacagcacaccctgtgcccctctg (SEQ ID NO:144)

MICA#032

gtcttcgttataacctcacggtgtcttctgggaatggatctgtgcagtcagggtttcttgcctgaggtacatctgga  
10 tggctagcccttcttgcgctatgacaggcagaaaatgcagggaagcccccaggacagtgggcagaagaatgtctt  
ggaaataagacatgggacagagagaccagggtatgacagggaacggaaaggacctcaggatgacctggctcata  
tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag  
gagctcccagcatttctactacgatggggagctcttccctcccaaaaccggagactaaggaaaggacaaatgccc  
cagctcccccagagctcagacctggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac  
15 TctatcacgctatgcatgcagactgccatgcaggaactacggcgatatactaaaatccAgcgtagctccaggagaaG  
agtgcacccccaatggatgaatgtcacccgcagcgaggccatcagagggaacaattaccgtgacatgcagggtcttggc  
tttctatcccaggaaatcacactgagctggcgatcaggaatgggtatctttagccacgacaccagcagtgggggg  
atgtcttgcctgatgggaatggaacctaccagacctgggtggccaccaggatttggcaaggagaggagcagagggt  
cacctgtctacatggaacacagcgggaatcacagcacaccctgtgcccctctg (SEQ ID NO:145)

20 MICA#033

gtcttcgttataacctcacggtgtcttctgggaatggatctgtgcagtcagggtttcttgcctgaggtacatctgga  
tggctagcccttcttgcgctatgacaggcagaaaatgcagggaagcccccaggacagtgggcagaagaatgtctt  
ggaaataagacatgggacagagagaccagggtatgacagggaacggaaaggacctcaggatgacctggctcata  
tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag  
25 gagctcccagcatttctactacgatggggagctcttccctcccaaaaccggagTctaggaaaggacagtgccc  
cagctcccccagagctcagacctggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac  
actatcacgctatgcatgcagactgccatgcaggaactacggcgatatactaaaatccagcgtagctccaggagaaac



t t c t a t c c c c g g a a t a t c a T a c t g a c c t g g c g t c a g g a t g g g g t a t c t t t g a g c c a c g a c a c c c a g c a g t g g g g g g  
a t g t c c t g c c t g a t g g g a a t g g a a c c t a c c a g a c c t g g g t g g c c a c c a g g a t t t g c c g a g g a g a g g a g c a g a g g t t  
c a c c t g c t a c a t g g a a c a c a g c g g g a a t c a c a g c a c t c a c c c t g t g c c c t c t g (SEQ ID NO: 148)

MICA#036

5 g t c t t c g t t a t a a c c t c a c g g t g c t g t c c g g g a t g g a t c t g t g c a g t c a g g g t t t c t c g t g a g g t a c a t c t g g a  
t g g t c a g c c c t t c c t g c g c t g t g a c a g g c a g a a a t g c a g g g c a a a g c c c c a g g g a c a g t g g g c a g a a g a t g t c c t g  
g g a a a t a a g a c a t g g g a c a g a g a c c a g g g a c t t g a c a g g g a a c g g a a g g a c c t c a g g a t g a c c c t g g c t c a t a  
t c a a g g a c c a g a a a g a a g g c t t g c a t t c c c t c c a g g a g a t t a g g g t c t g t g a g a t c c a t g a a g a c a a c a g c a c c a A  
g a g c t c c c a g c a t t t c t a c t a c g a t g g g g a g c t c t t c c t c t c c a a a a c c t g g a g a c t g a g g a a t g g a c a a t g c c c  
10 c a g t c c t c c a g a g c t c a g a c c t t g g c c a t g a a c g t c a g g a a t t t c t t g a a g g a a g a t g c c a t g a a g a c c a a g a c a c  
a c t a t c a c g c t a t g c a t g c a g a c t g c c t g c a g g a a c t a c g g c g a t a t c t a g a a t c c a g c t a g t c c t g a g g a g a a c  
a g t g c c c c c c a t g g t g a a t g t c a c c c g c a g c a g g g c c t c a g a g g g c a a c a t t a c c g t g a c a t g c a g g g c t t c t g g c  
t t c t a t c c c t g g a a t a t c a c a c t g a g c t g g c g t c a g g a t g g g g t a t c t t t g a g c c a c g a c a c c c a g c a g t g g g g g g  
a t g t c c t g c c t g a t g g g a a t g g a a c c t a c c a g a c c t g g g t g g c c a c c a g g a t t t g c c a a g g a g a g g a g c a g a g g t t  
15 c a c c t g c t a c a t g g a a c a c a g c g g g a a t c a c a g c a c t c a c c c t g t g c c c t c t g (SEQ ID NO: 149)

MICA#037

g t c t t c g t t a t a a c c t c a c g g t g c t g t c c t g g g a t g g a t c t g t g c a g t c a g g g t t t c t c g t g a g g t a c a t c t g g a  
t g g t c a g c c c t t c c t g c g c t g t g a c a g g c a g a a a t g c a g g g c a a a g c c c c a g g g a c a g t g g g c a g a a g a t g t c c t g  
g g a a a t a a g a c a t g g g a c a g a g a c c a g g g a c t t g a c a g g g a a c g g a a g g a c c t c a g g a t g a c c c t g g c t c a t a  
20 t c a a g g a c c a g a a a g a a g g c t t g c a t t c c c t c c a g g a g a t t a g g g t c t g t g a g a t c c a t g a a g a c a a c a g c a c c a g  
g a g c t c c c a g c a t t t c t a c t a c g a t g g g g a g c t c t t c c t c t c c a a a a c c t g g a g a c t g a g g a a t g g a c a a t g c c c  
c a g t c c t c c a g a g c t c a g a c c t t g g c c a t g a a c g t c a g g a a t t t c t t g a a g g a a g a t g c c a t g a a g a c c a a g a c a c  
a c t a t c a c g c t a t g c a t g c a g a c t g c c t g c a g g a a c t a c g g c g a t a t c t a a a a t c c g g c g t a g t c c t g a g g a g a a c  
a g t g c c c c c c a t g g t g a a t g t c a c c c g c a g c a g g g c c t c a g a g g g c a a c a t c a c c g t g a c a t g c a g g g c t t c c a g c  
25 t t c t a t c c c c g g a a t a t c a T a c t g a c c t g g c g t c a g g a t g g g g t a t c t t t g a g c c a c g a c a c c c a g c a g t g g g g g g  
a t g t c c t g c c t g a t g g g a a t g g a a c c t a c c a g a c c t g g g t g g c c a c c a g g a t t t g c c g a g g a g a g g a g c a g a g g t t  
c a c c t g c t a c a t g g a a c a c a g c g g g a a t c a c a g c a c t c a c c c t g t g c c c t c t g (SEQ ID NO: 150)

## MICA#038

gtcttcgttataacctcacggctgctgctcgggaggatcgtgcagtcagggttctcgcaggtacatctgga  
tggtcagcccttctcgcctgtgacaggcagaaaigcaggggcaaagccccaggacagtgggcagaagatgtcctg  
ggaaaataagacatgggacagagagaccagggacltgacagggaacggaaaggacctcaggatgacctggctcata  
5 tcaaggaccagaaagaaggcttgcattccctccaggagattagggctgtgagatccaigaagacaacagcaccag  
gagctccagcattctactacgatggggagctcttctctccaaaacctggagactgaggaaiggaatgccc  
cagctctccagagctcagaccttggccaigaacgtcaggaaattcttgaaggaagatgccatgaagaccaagacac  
actatcacgctatgcatgcagactgccctgcaggaactacggcgatactaaaaiccggcgtagctctgaggagaac  
agtgcccccatggtagaatgtcacccgcagcgaggccctcagaggggcaacatCaccgtgacatgcagggtctccagc  
10 tctatccccggaatatcacactgacctggcgctcaggatgggtatctttagccacgacaccagcagtgggggg  
atgtcttgccctgatgggaatggaacctaccagacctgggtggccaccaggatttgccaaggagaggagcagagggt  
caccgtgctacatggaacacagcgggaatcacagcactcaccctgtgcccctgt (SEQ ID NO:151)

## MICA#039

gtcttcgttataacctcacggctgctgctcgggaggatcgtgcagtcagggttctcgcaggtacatctgga  
15 tggtcagcccttctcgcctgtgacaggcagaaaigcaggggcaaagccccaggacagtgggcagaagatgtcctg  
ggaaaataagacatgggacagagagaccagggacltgacagggaacggaaaggacctcaggatgacctggctcata  
tcaaggaccagaaagaaggcttgcattccctccaggagattagggctgtgagatccaigaagacaacagcaccag  
gagctccagcattctactacgatggggagctcttctctccaaaacctggagactgaggaaiggaatgccc  
cagctctccagagctcagaccttggccaigaacgtcaggaaattcttgaaggaagatgccatgaagaccaagacac  
20 actatcacgctatgcatgcagactgccctgcaggaactacggcgatactaaaaiccggcgtagctctgaggagaac  
agtgcccccatggtagaatgtcacccgcagcgaggccctcagaggggcaacatCaccgtgacatgcagggtctccagc  
tctatccccggaatatcatactgacctggcgctcaggatgggtatctttagccacgacaccagcagtgggggg  
atgtcttgccctgatgggaatggaacctaccagacctgggtggccaccaggatttgccaggagaggagcagagggt  
caccgtgctacatggaacacagcgggaatcacagcactcaccctgtgcccctgt (SEQ ID NO:152)

## 25 MICA#040

gtcttcgttataacctcacggctgctgctcgggaggatcgtgcagtcagggttctcgcaggtacatctgga  
tggtcagcccttctcgcctgtgacaggcagaaaigcaggggcaaagccccaggacagtgggcagaagatgtcctg



tcaaggaccagaaagaaggcttgcatlccclccaggagatlagggctgtgagatccatgaagacaacagcaccag  
gagclcccagcatlctclacgaiggggagctclccclcccaaaacctggagactgaggaatggacaatgccc  
caglccclccagagctcagacctlggccatgaacgtcaggaatlctlgaaggaagalgccatgaagaccaagacac  
actatcacgctatgcatgcagactlccctgcaggaactacggcgatctaaaaaccggcgtaglccctgaggagaac  
5 agtgcaccccaatggigaaatgicacccgcagcgaggccctcagagggaacatcacctgacatgcagggctlccagc  
tictatccccggaatatcatlactgacctggcgctcaggatgggtatctllagccacgacacccagcaglggggg  
atgtccctgctgatgggaatggaacctaccagacctggglggccacTaggatllgccgaggagaggagcagagglt  
cacctgctacatggaacacagcgggaatcacagcactcacctlgccccctg (SEQ ID NO:155)

MICA\*043

10 gtcttcgttataaacctcacggctgctgtccgggatggatctgtgcagtcagggtlctcgcctgaggtacatctgga  
tggctcagccclccctgcgctatgacaggcagaaaatgcagggaagccccaggacaglgggcagaagaatgctctg  
ggaaaataagacatgggacagagagaccagggaactgacaggaacggaaaggacctcaggatgacctggctcata  
tcaaggaccagaaagaaggcttgcatlccclccaggagatlagggctgtgagatccatgaagacaacagcaccag  
gagclcccagcatlctclacgaiggggagctclccclcccaaaacctggagactgaggaatggacaatgccc  
15 caglccclccagagctcagacctlggccatgaacgtcaggaatlctlgaaggaagalgccatgaagaccaagacac  
gctatcacgctatgcatgcagactlccctgcaggaactacggcgatctaaaaaccggcgtaglccctgaggagaac  
agtgcaccccaatggigaaatgicacccgcagcgaggccctcagagggaacatcacctgacatgcagggctlctggc  
tictatccccggaatatcacactgagctggcgctcaggatgggtatctllagccacgacacccagcaglggggg  
atgtccctgctgatgggaatggaacctaccagacctggglggccaccaggatllgccaaggagaggagcagagTtt  
20 caccigtctacatggaacacagcgggaatcacagcactcacctlgccccctlgggaagtgctgggtgcttcagagt  
catlggcagacatccatgtlctgtcgt  
glaagaagaaaacatcagctgcagagggtccag (SEQ ID NO:156)

MICA\*044

gtcttcgttataaacctcacggctgctgtccgggatggatctgtgcagtcagggtlctcgcctgaggtacatctgga  
25 tggctcagccclccctgcgctatgacaggcagaaaatgcagggaagccccaggacaglgggcagaagaatgctctg  
ggaaaataagacatgggacagagagaccagggaactgacaggaacggaaaggacctcaggatgacctggctcata  
tcaaggaccagaaagaaggcttgcatlccclccaggagatlagggctgtgagatccatgaagacaacagcaccag

5 t t c t a t c c c c g g a a t a t c a c a c t t g a C c t g g c g t c a g g a t g g g g t a t c t t t g a g c c a c g a c a c c c a g c a g t g g g g g g  
a t g t c c t g c c t g a t g g g a a t g g a a c c t a c c a g a c c t g g g t g g c c a c c a g g a t t t g c c a a g g a g a g g a g c a g a g g t t  
c a c c t g c t a c a t g g a a c a c a g c g g g a a t c a c a g c a c t c a c c c t g t g c c c t c t g (SEQ ID NO:157) .

MICA#045

10 tggctcagcccttccctgcgcctgacaggcagaaatgcaggggcaaacgccagggacagtgggcagaagatgtccctg  
ggaaaataagacatgggacagagagaccagggaactgacagggaacggaaaggacctcaggaatgacctggctcata  
tcaaggaccagaaagaaggcttgcatctccctccaggagatagggtctgtgagatccatgaagacaacagcaccag  
gagctcccagcatcttactacgatggggagctcttctctcccaaacctgggagactgaggaatggacaatgccc  
cagctctccagagctcagacctggccatgaacgtcaggaattcttgaaggaagatgccatgaagaccaagacac  
15 actatcacgctatgcatgcagactgccctgcaggaactacggcgatactcaaaatccggcgtagtccctgaggagaac  
agtgcaccccatggtagaagtcacccgcagtgaggctcagaggggcaacattaccgtgacatgcagggctcttggc  
ttctatccctggaatatcacactgagctggcgctcaggatggggatctttagccacgacacccagcagtgggggg  
atgtccctgctgatgggaatggaacctaccagacctgggtggccaccaggatttgcGaaggagaggagcagaggtt  
caccctgctacatggaacacagcgggaatcacagcacctacccctgtgccctctgggaaagtgtgggtgttccagagt  
20 cattggcagacattccatgttctgctgttgcctgctgctatcttctgtattattatttctatgtccgttgtt  
glaagaagaaaacatcagctgcagagggtccag (SEQ ID NO: 158)

MICA\*046

25 tggtcagcccttccctgcgtgtgacaggcagaaaatgcagggcaaacgcccagggacagtgggcagaagaatgctctg  
ggaaaataagacatgggacagagagaccagggacttgacagggaacggaaaggaccttcaggaatgacctggctcata  
tcaaggaccagaaagaaggcttgcatccctccaggagatagggtctgtgagatccatgaagacaacagcaccag  
gagctcccagcatcttctactacgatggggagctcttctctcccaaaacctggagactgaggaatggacaatgccc

[illegible]

**MICA#047**

10 g t c t t c g t t a t a a c c t c a c g g t g c t g t c c g g g g a l g g a t c t g t g c a g t c a g g g t t t c t c g c t g a g g g a c a t c t g g a  
t g g t c a g c c c t t c c t g c g c t g t g a c a g g c a g a a a t g c a g g g c a a a g c c c c a g g g a c a g t g g g c a g a a g a t g t c c t g  
g g a a t a a g a c a t g g g a c a g a g a c c a g g g a c t t g a c a g g g a a c g g a a g g a c c t c a g g a t g a c c c t g g c t c a t a  
t c a a g g a c c a g a a a g a a g g c t t g c a t t c c c t c c a g g a g a t t a g g g t c t g t g a g a t c c a t g a a g a c a a c a g c a c c a g  
g a g c t c c c a g c a t t t c t a c t a c g a t g g g g a g c t c t t c c t c t c c c a a a a c c t g g a g a c t g a g g a a t g g a c a a t g c c c  
15 c a g t c c t c c a g a g c t c a g a c c t t g g c c a t g a a c g t c a g g a a t t t c t t g a a g g a a g a t g c c a t g a a g a c c a a g a c a c  
a c t a t c a c g c t a t g c a t g c a g a c t g c c t g c a g g a a c t a c g g c g a t a t c t a a a a t c c g g c g t a g t c c t g a g g a g a a c  
a g t g c c c c c c a t g g t g a a t g t c a c c c g c a g c g a g g c c t c a g a g g g c a a c a t t a c c g t g a c a t g c a g g g c t t c t g g c  
t t c t a t c c c t g g a a t a t c a c a c t g a g c t g g c g t c a g g a t g g g g t a t c t t t g a g c c a c g a c a c c c a g c a g t g g g g g g  
a t g t c c t g c c t g a t g g g a a t g g a a c c t a c c a g a c c t g g g t g g c c a c c a g g a t t t g c c a a g g a g a g g a g c a g a g g t t  
20 c a c c t g c t a c a t g g a a c a c a g c g g g a a t c a c a g c a c t c a c g c t g t g c c c t c t g g g a a a g t g c t g g t g c t t c a g a g t  
c a t t g g c a g a c a t t c a t g t t t c t g c t g t t g c t g c t g c t g c t g c t a t t t t g t t a t a t a t t t t c t a t g t c t  
g t g t t g t a a g a a g a a a a c a t c a g c t g c a g a g g g t c c a g (SEQ ID NO: 160)

**MICA#048**

gcttcgttataacctcacggctgcctcctgggaaggacatctgcagtcagggttcttgcctgaggtacatctgga  
25 tggtcagcccttcttgcgctatgacaggcagaaatgcagggcaaagccccaggacagtgggcagaagaatgctctg  
ggaaataagacatgggacagagagaccagggtacatgacagggaacggaaaggacctcaggaatgacctggctcata  
tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag



gagctcccgagcatctctactacgaaggggagctctctctcccaaaaccctggagac t gaggaa tggacag t gccc  
cag tcc tccagagctcagacctggccatgaacgtcaggaattctctgaaggaaga t gcca tgaagaccaagacac  
actatcacgctatgcatagcagac t gccc tgcaggaac t acggcgata t c t agaa tccggcg t ag tcc t gaggagaac  
ag t g c c c c c c a t g g t g a a t g t c a c c c g c a g c g a g g c c t c a g a g g g c a a c a t c a c c g t g a c a t g c a g g g c t t c c a g c  
5 t t c t a t c c c c g g a a t a t c a t a c t g a c c t g g c g t c a g g a t g g g g t a t c t t t g a g c c a c g a c a c c a g c a g t g g g g g  
a t g t c c t g c c t g a t g g g a a t g g a a c c t a c c a g a c c t g g g t g g c c a c c a g g a t t t g c c g a g g a g a g g a g c a g a g g t t  
c a c c t g c t a c a t g g a a c a c a g c g g g a a t c a c a g c a c t a c c c t g t g c c c t c t g g g a a a g t g c t g g t g c t t c a g a g t  
c a t t g g c a g a c a t t c a t g t t t c t g c t g t t g c t g c t g c t g c t a t t t t t g t a t a t a t a t t t t c t a t g t c c g t t  
g t t g t a a g a a g a a a a c a t c a g c t g c a g a t g g t c c a g a g c t c g t g a g c c t g c a g g t c c t g g a t c a a c a c c c a g t t g g  
10 g a c g a g t g a c c a c a g g g a t g c c a c a c a g c t c g g a t t c a g c c t c t g a t g t c a g c t c t t g g g t c c a c t g g c t c c a c t  
(SEQ ID NO:161)

**MICA#049**

[illegible]

In the following, Probe List M1 and M2 are shown in Tables 25-1 and 25-2 and Tables 26-1 and 26-2 and Tables 27-1 and 27-2 and Tables 28-1 and 28-2 respectively.

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Table 25-1

Probe No.	Base Sequence
0	tgg gac aga gag acc agA ( SEQ ID No: 1)
1	tcc caa aac ctg gag act A ( SEQ ID No: 2)
2	g gaa cta cgg cga tat cta A ( SEQ ID No: 3)
3	cgg cga tat cta aaa tcc G ( SEQ ID No: 4)
4	cc tgg aat atc aca ctg aG ( SEQ ID No: 5)
5	t att ttt gtt att att att ttc taC ( SEQ ID No: 6)
6	c ctc acg gtg ctg tcc G ( SEQ ID No: 7)
7	gtg aat gtc acc cgc agT ( SEQ ID No: 8)
8	c gta gtc ctg agg aga aG ( SEQ ID No: 9)
9	t cag cct ctg atg tca gC ( SEQ ID No: 10)
10	cag ccc ttc ctg cgc tA ( SEQ ID No: 11)
11	gag act gag gaa tgg aca G ( SEQ ID No: 12)
12	cc cgg aat atc aca ctg aC ( SEQ ID No: 13)
13	gcc acc agg att tgc cG ( SEQ ID No: 14)
14	g cga tat cta gaa tcc agc A ( SEQ ID No: 15)
15	gg gac aga gag acc agG ( SEQ ID No: 16)
16	cc caa aac ctg gag act G ( SEQ ID No: 17)
17	gtt tct gct gtt gct gct G ( SEQ ID No: 18)
18	ag acc tgg gtg gcc acT ( SEQ ID No: 19)
19	t gct gct g gct gct gCT ( SEQ ID No: 20)
20	c acc cgc agc gag gcA ( SEQ ID No: 21)
21	ctc ttc ctc tcc caa aac G ( SEQ ID No: 22)
22	gc tcc cag cat ttc tac taT ( SEQ ID No: 23)
23	cgg cga tat cta gaa tcc A ( SEQ ID No: 24)
24	g tca gct ctt ggg tcc G ( SEQ ID No: 25)
25	cc atg aag acc aag aca cT ( SEQ ID No: 26)
26	tgc caa gga gag gag caA ( SEQ ID No: 27)
27	gaa cta cgg cga tat cta G ( SEQ ID No: 28)
28	c cag cat ttc tac tac gat A ( SEQ ID No: 29)
29	gct gca gag ggt cca gG ( SEQ ID No: 30)
30	c tgg cgt cag gat ggg C ( SEQ ID No: 31)

Table 25-2

Probe No.	Base Sequence
31	ggc ttg cat tcc ctc cG (SEQ ID No: 32)
32	c cca gtt ggg acg agt gT (SEQ ID No: 33)
33	ct gct gct gct gct gcT (SEQ ID No: 34)
34	a gaa gat gtc ctg gga aaC (SEQ ID No: 35)
35	t gtg cag tca ggg ttt ctT (SEQ ID No: 36)
36	gcc tca gag ggc aac atC (SEQ ID No: 37)
37	ct gct gct gct gct gcT (SEQ ID No: 38)
38	ttc tat ccc cgg aat atc aT (SEQ ID No: 39)
39	gtt gct gct gct gct gcT (SEQ ID No: 40)
40	cag acc ttg gcc atg aac A (SEQ ID No: 41)
41	gg aat cac agc act cac G (SEQ ID No: 42)
42	a cgg cga tat cta aaa tcc A (SEQ ID No: 43)
43	ctc tcc caa aac ctg gag T (SEQ ID No: 44)
44	ttc ttg aag gaa gat gcc G (SEQ ID No: 45)
45	cat gaa gac aac agc acc aA (SEQ ID No: 46)
46	ggg ttt ctc gct gag gG (SEQ ID No: 47)
47	caa gga gag gag cag agT (SEQ ID No: 48)
48	g gcc acc agg att tgc G (SEQ ID No: 49)
49	c agg gct tct ggc ttc tG (SEQ ID No: 50)
50	ag aaa aca tca gct gca gaT (SEQ ID No: 51)
51	at caa cac cca gtt ggg aT (SEQ ID No: 52)

Table 26-1

Probe No.	Base Sequence
0	a gag acc agA gac ttg aca (SEQ ID No: 53)
1	ctg gag act Aag gaa tgg a (SEQ ID No: 54)
2	cga tat cta Aaa tcc ggc g (SEQ ID No: 55)
3	cta aaa tcc Ggc gta gtc c (SEQ ID No: 56)
4	c aca ctg aGc tgg cgt c (SEQ ID No: 57)
5	att att ttc taC gtc tgt tgt t (SEQ ID No: 58)
6	tg ctg tcc Ggg gat gga (SEQ ID No: 59)
7	acc cgc agT gag gcc tc (SEQ ID No: 60)
8	g agg aga aGa gtg ccc c (SEQ ID No: 61)
9	tg atg tca gCt ctt ggg tc (SEQ ID No: 62)
10	c ctg cgc tAt gac agg c (SEQ ID No: 63)
11	gaa tgg aca Gtg ccc cag (SEQ ID No: 64)
12	c aca ctg aCc tgg cgt c (SEQ ID No: 65)
13	gg att tgc cGa gga gag g (SEQ ID No: 66)
14	gaa tcc agc Ata gtc ctg a (SEQ ID No: 67)
15	a gag acc agG gac ttg ac (SEQ ID No: 68)
16	ctg gag act Gag gaa tgg (SEQ ID No: 69)
17	gtt gct gct G gct gct g (SEQ ID No: 70)
18	g gtg gcc acT agg att tg (SEQ ID No: 71)
19	gct gct g gct gct gcT a (SEQ ID No: 72)
20	agc gag gcA tca gag gg (SEQ ID No: 73)
21	tcc caa aac Gtg gag act g (SEQ ID No: 74)
22	at ttc tac taI gat ggg gag (SEQ ID No: 75)
23	cta gaa tcc Agc gta gtc c (SEQ ID No: 76)
24	t ggg tcc Gct ggc tcc (SEQ ID No: 77)
25	cc aag aca cTc tat cac gc (SEQ ID No: 78)
26	a gag gag caA agg ttc acc (SEQ ID No: 79)
27	cga tat cta Gaa tcc ggc g (SEQ ID No: 80)
28	tac tac gat Agg gag ctc t (SEQ ID No: 81)
29	g ggt cca gGg ctc gtg (SEQ ID No: 82)
30	cag gat ggg Cta tct ttg a (SEQ ID No: 83)

Table 26-2

Probe No.	Base Sequence
31	at tcc ctc cGg gag att ag (SEQ ID No: 84)
32	t gct gct gct gct gcT at (SEQ ID No: 85)
33	ct gct gct gcT att ttt gtt (SEQ ID No: 86)
34	c ctg gga aaC aag aca tgg (SEQ ID No: 87)
35	a ggg ttt ctT gct gag gta (SEQ ID No: 88)
36	g ggc aac atC acc gtg ac (SEQ ID No: 89)
37	gct gct gct gct gcT att (SEQ ID No: 90)
38	cgg aat atc aTā ctg acc tg (SEQ ID No: 91)
39	gcc atg aac ATc agg aat tt (SEQ ID No: 92)
40	gc act cac Gct gtg ccc (SEQ ID No: 93)
41	cta aaa tcc Agc gta gtc c (SEQ ID No: 94)
42	aac ctg gag Tct gag gaa t (SEQ ID No: 95)
43	gaa gat gcc Gtg aag acc (SEQ ID No: 96)
44	c agc acc aAg agc tcc c (SEQ ID No: 97)
45	c gct gag gGa cat ctg g (SEQ ID No: 98)
46	g gag cag agT ttc acc tg (SEQ ID No: 99)
47	agg att tgc Gaa gga gag g (SEQ ID No: 100)
48	ct ggc ttc tGt ccc tgg a (SEQ ID No: 101)
49	a gct gca gaT ggt cca ga (SEQ ID No: 102)
50	ca gtt ggg aTg agt gac c (SEQ ID No: 103)

Table 27-1

Allele Number		Probe Number for Detection				
MICA*001	0	1	2	3	4	
MICA*00201	5					
MICA*00202	6	7				
MICA*004	8	9				
MICA*005	10	11	12	13		
MICA*006	14					
MICA*00701	7					
MICA*00702	15	16				
MICA*00801	17	9				
MICA*00802	18	19				
MICA*00803	20					
MICA*00901	21	9				
MICA*00902	22					
MICA*010	23	13	9			
MICA*011	24					
MICA*01201	25					
MICA*01202	26					
MICA*013	6	27	13			
MICA*014	28	8				
MICA*015	28	29				
MICA*016	30	9				
MICA*017	31					
MICA*018	16					
MICA*019	32					
MICA*020	33					
MICA*021	34					
MICA*022	6	23	13			
MICA*023	6	17				
MICA*024	35	10	11	36	12	
MICA*025	35	16				

Table 27-2

Allele Number	Probe Number for Detection		
MICA*026	7	37	
MICA*027	38	39	
MICA*028	27	17	
MICA*029	40		
MICA*030	41		
MICA*031	35		
MICA*032	25	42	8
MICA*033	43		
MICA*034	44	12	
MICA*035	6	38	
MICA*036	45		
MICA*037	38		
MICA*038	36		
MICA*039	30		
MICA*040	15		
MICA*041	46	5	
MICA*042	18		
MICA*043	47		
MICA*044	6	8	12
MICA*045	48		
MICA*046	49		
MICA*047	46	41	
MICA*048	50		
MICA*049	51		

Table 28-1

Allele Number	Probe Number for Detection				
	0	1	2	3	4
MICA*001	0	1	2	3	4
MICA*00201	5				
MICA*00202	6	7			
MICA*004	8	9			
MICA*005	10	11	12	13	
MICA*006	14				
MICA*00701	7				
MICA*00702	15	16			
MICA*00801	17	9			
MICA*00802	18	19			
MICA*00803	20				
MICA*00901	21	9			
MICA*00902	22				
MICA*010	23	13	9		
MICA*011	24				
MICA*01201	25				
MICA*01202	26				
MICA*013	6	27	13		
MICA*014	28	8			
MICA*015	28	29			
MICA*016	30	9			
MICA*017	31				
MICA*018	16				
MICA*019	23	13	32		
MICA*020	33				



Table 28-2

Allele Number	Probe Number for Detection				
MICA*021	34				
MICA*022	6	23	13		
MICA*023	6	17			
MICA*024	35	10	11	36	12
MICA*025	35	16			
MICA*026	7	37			
MICA*027	38	32			
MICA*028	27	17			
MICA*029	39				
MICA*030	40				
MICA*031	35				
MICA*032	25	41	8		
MICA*033	42				
MICA*034	43	12			
MICA*035	6	38			
MICA*036	44				
MICA*037	38				
MICA*038	36				
MICA*039	30				
MICA*040	15				
MICA*041	45	5			
MICA*042	18				
MICA*043	46				
MICA*044	6	8	12		
MICA*045	47				
MICA*046	48				
MICA*047	45	40			
MICA*048	49				
MICA*049	50				

The present invention is not limited to the above embodiments and various changes and modifications can be made within the spirit and scope of the present invention. Therefore, to apprise the public of the scope of the present invention, the following claims are made.

This application claims priority from Japanese Patent Application Nos. 2003-430553 filed on December 25, 2003, 2003-430554 filed on December 25, 2003, 2003-430555 filed on December 25, 2003, 2003-430556 filed on December 25, 2003, 2003-430557 filed on December 25, 2003, 2003-430558 filed on December 25, 2003 and 2003-430559 filed on December 25, 2003, which are hereby incorporated by reference herein.